COAL AGE

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R. DAWSON HALL
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Fuel That Appeals to the Senses

OIL IS TRULY a luxury fuel, according to its users. It appeals to most of the senses: That of hearing because the noise of pumping and combustion can be heard through the house; that of taste because, as one consumer said, "I and my wife think we can taste oil with every morsel of food we eat," that of smell, for all the romantic and pleasurable odors of the kerosene lamp of earlier days are duplicated; that of sight, for the smoke of imperfect combustion also recalls the house lamps of earlier days. Yet they say you can "put in oil and forget it." That is what people who have put in oil never do. When away from home they worry, wondering if the house will be there when they return. When in the home they are kept in mind of the oil burner they have purchased by evidence furnished by at least three of the senses. Coal is quiet, tasteless, free of odor and less costly, but happen what may we must try something new.

Unscrambling Jacksonville

UNAVAILING seem the efforts to adjust by parley the disorder caused by the wrong decision at Jacksonville. The miners are quite largely taking refuge in flight either to other industries or to the non-union fields. The operators are discussing new financing that will enable them to battle for the trade available. So many new types of machinery are now offering themselves, so many opportunities for economy are presented, that it is not difficult to find ways of cutting cost 40 or 50 per cent. A few years ago that was not so. Had the crisis come then, nothing, no matter how drastic, would have enabled operators to cut heavily on costs. Those were the days when we discussed the "shaving of expenditures." Now we speak of "cutting costs," an operation as possible in fact as in word.

Let Cincinnati and the American Mining Congress Exposition heal for the individual operator the wounds which Jacksonville and the United Mine Workers of America inflicted. Too many operators are spending their time in worrying, presaging, wondering, making paltry economies. You hear their long lament: "When will the Jacksonville agreement be ended? When will Lewis surrender to the inevitable logic of facts? When will the miners desert the union and if they do, will they abide by the result and not start again their unionizing activities?" Whether one answers these questions rightly or wrongly matters little. The right kind of thinking would lead to a decision to modernize and get into the market now and stay in it hereafter. The man who gets his costs down low enough to meet the present market will be in good shape to meet prices at any time.

Why forecast coming prospects when the problems of the future are best met by solving the problems of the present? However, some people do not like to play the game as it is, but prefer to imagine what would happen if only the pieces on the board were in a different position from that in which they are. They can then see themselves making a checkmate. That is a most heartening exercise of the imagination, but alas after all the possible rearrangements of pawns, knights, bishops, castles, queens and kings have been envisaged, the game must still be played as it is, and others are getting ready to play it as the present Jacksonville agreement would direct, not by waiting but by modernizing, not by whining but by revising methods.

What About the Strike?

WILLIAM GREEN, late of the United Mine Workers, now president of the American Federation of Labor, said some sound things to the men of Harvard the other day. "Between capital and labor," said he, "there is an interdependence so fixed and irrevocable as to make complete success attainable only through co-operation and understanding." He added that peaceful settlement is the present aim of union tactics; he suggested that the strike is becoming an outworn weapon.

From an official of the United Mine Workers, that readiest of all striking organizations, an anti-strike statement such as that somehow would sound strange. Force—and opportunity—made the United Mine Workers what it is today. Seldom, if ever, has any mine union official deprecated the strike as a weapon of labor. But as head of the American Federation of Labor, Mr. Green is privileged to speak his mind as he could hardly have done when he was secretary under John L. Lewis. Mr. Green, no doubt, felt in other days toward the strike the same as he does now; but there are thoughts that a mine union official may hold but cannot safely reveal if he expects to stay at the head of the pack.

The fact that Mr. Green feels as he does is merely additional evidence that the same sanity prevails among mine union men who still lead the pack. This sanity may be reflected strongly in future relations between operators and mine labor. Conditions are developing which will permit a United Mine Workers' official to display it without fear of being torn limb from limb by his own horde.

Co-operative Mining Mistakes

CO-OPERATIVE mining is another thorn in the side of the United Mine Workers. The Union is struggling valiantly to stamp out the slowly rising tide of "co-operation" between mine owner and mine worker, especially in Illinois and Indiana. It has flatly warned all men working on such a basis that they must quit or be thrown out of the union. "Co-operation" is treason from the standpoint of the organization. But from the standpoint of the operator it has its dangers, too, that ought not to be overlooked.

The more co-operative ventures there are, the longer it will be before the miners of this country are ready for a general revision of wages. After all, that gen-

eral revision is what the industry must have—as *one* of the remedial measures for present ills—and co-operative mining, when used as a device for evading the exact letter of the Jacksonville agreement, postpones "the day" and is helpful only temporarily to the mines involved and not always helpful even to them. In an engineering sense a mine may suffer by such a venture, too. When miners are producing coal for so much a ton on railroad cars, it is not possible to conceive of ordinary supervision resulting in proper protection of the property. Extraction is bound to be reckless.

Therefore, let us have done with co-operative mining of the form that is practiced now. If it were possible for mine workers to bear a personal interest in their company, than co-operation might be real—but that is another story.

Why They Succeed

COLLEGE TRAINING is an investment, and not all investments are of a kind that will succeed. When a coal deposit is made the opportunity for opening a mine the investor believes it a good enough prospect for the expenditure of capital. If it is not, then the capital is wasted, for the importance of the coal deposit is basic. Someone has said that geology is basic in mining because if the geological conditions are not right, nothing else—neither administration, finance, mining, mechanical, nor electrical engineering—matters.

So in education it is the man that is important. Education cannot "lead out" of a man what he does not have in him. A good tipple, a well-laid haulage road or a well-designed power house will do no harm to a poor coal deposit but equally it can do little good. It may be immensely helpful, however, if a good coal seam is to be operated. Similarly a man merely of student type, will not be hurt by education but he will not be helped—as an executive. If he is to be an administrator he must have in him some qualities of management—frugality, judgment, imagination, perseverance, foresight and forehandedness—sensing also the relative values of various kinds of effort.

Unfortunately our colleges appeal most strongly to the student type of mind, the kind of intellect they cannot help much in the quest for executive positions. When a man of intrinsic character, having the power of leadership and possessing initiative, goes to college he makes good use of his abilities. He adds knowledge to inherent power and goes ahead. We need more of such men at our universities.

They fill the specifications of leadership. They are well worthy of the investment expended on them. They may not absorb knowledge quite as readily as others. Some men are not ready to convert to their uses predigested knowledge. They prefer to get much of their learning out of the raw. Such men, however, think for themselves and what they take from college training is of immense value to them.

Provided we know that Brown had faulted or sulphurous coal we are not prone to say: "I will not buy a motor-generator set because Brown, who had one, failed in business." So, we should not say, "I will not waste my time graduating because Brown, who has a second-rate brain and no character, is working, after years in college, in some humdrum occupation and is kept where he is by the exercise of superhuman sufferance on the part of his employers." The investment must be made on a worth-while article and the man who enters college should know that no institution can sell him a brain and a backbone.

As a rule, however, education is rarely wasted on the wrong kind of person. Most of the investments are profitable. The figures of the National Industrial Board which give the percentage of men in the higher executive positions who have had college training do not show what such training does, partly because influence is a factor in obtaining such positions and partly because the Board does not give the relative number seeking those positions by the collegiate and the non-collegiate route.

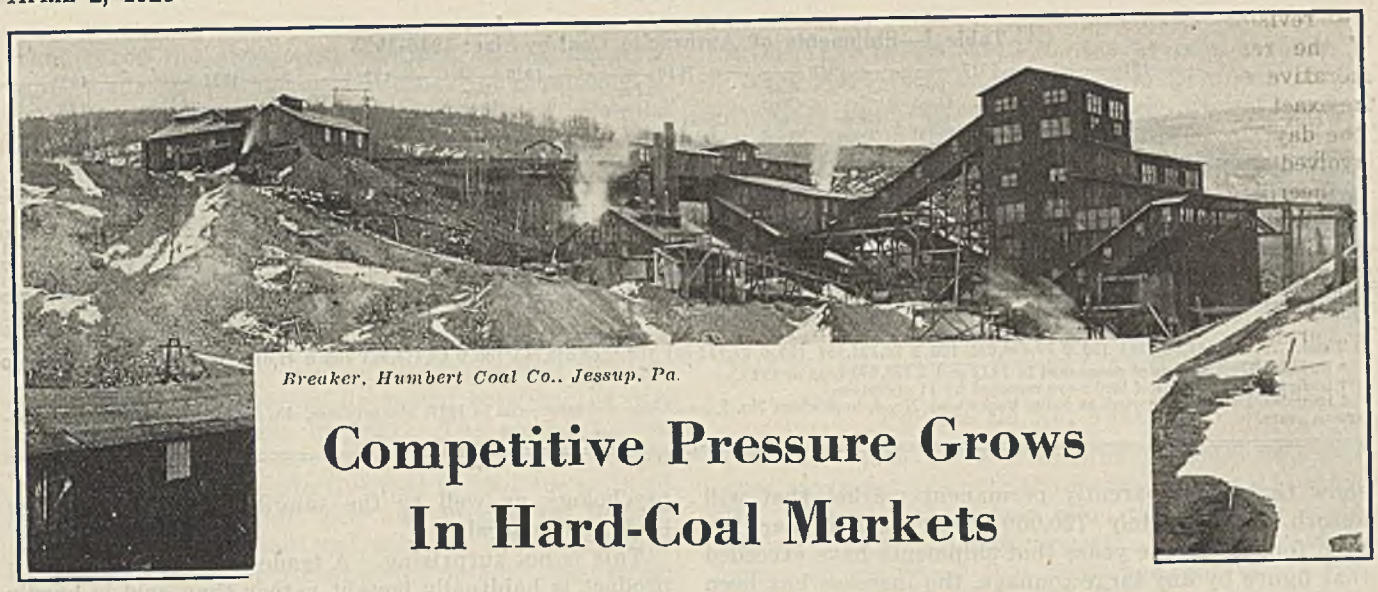
We believe it would have been convincing if the figures, were it possible, had been so collected. But still it is gratifying to learn that in the metal trades it was found in a survey covering 318 plants and employing 106,500 persons, most of whom were not aided by a college education, nearly half the executive positions were held by college graduates. In the paper-and-pulp industry these trained men occupy 32 per cent of the executive positions and 50 per cent of the technical.

In all the industries under observation, according to the report, the college graduates in technical positions come almost entirely from the technical schools but those holding higher administrative positions include a considerable number of graduates with purely academic or other than engineering training. That is the unfortunate part of the story. The man in charge of the material is often "brainier" than the man who has charge of the men, even in industries where the engineering features are of leading importance. Some day we shall learn that the administrator should not be paid more than the engineer but that, we fear, is still a long way off, and as conditions now stand, the only way for an engineer to land the big pay is to be at once both engineer and administrator.

Suspensoids or Aerosols

PHILIP DRINKER and R. M. Thomson, of the Department of Ventilation and Illumination, of the Harvard School of Health, have a method of determination of the quantity of suspensoids (dusts, fumes and smokes) in air or gas by alternating-current precipitators which they described at a joint meeting of the American Institute of Mining and Metallurgical Engineers and the National Safety Council. Probably those who placed that paper on the agenda did so partly in the hope that it might have a value in promoting health in the coal and metal mines and perhaps also that it might prevent coal dust from spreading through at least some parts of coal workings.

The project seems far from possible accomplishment though it might some day be applied to the return airways of the mine where the dust all floats in with the air current and none is made by travel. It could hardly be applied effectively, one would imagine, in the intake roadways or at the working faces. But after all is said all the electric action effects is the removal of dust. It would still be necessary to provide means of combatting what might escape the precipitators. However, the world is moving along at such a pace that who knows but what in a few years small particles suspended in the air of the mine, suspensoids or aerosols as the erudite term them, will be removed electrically. It seems a far cry; it appears expensive and likely to be ineffective. Still, greater wonders have happened, and the new method of precipitation has much in its favor.



Breaker, Humbert Coal Co., Jessup, Pa.

Competitive Pressure Grows In Hard-Coal Markets

Old Idea That Demand Would Absorb All Domestic Sizes Produced Shattered by Inroads Made by Rival Fuels — Merchandising Looms Large as Anthracite Industry Grapples with New Problems

By Sydney A. Hale
Special Contributor, *Coal Age*,
New York City

SHORTLY AFTER the close of the World War, a salesman connected with one of the anthracite-producing companies resigned to join the ranks of the coal jobbers. His late superior, in wishing him well, commended his enterprise and sagacity in quitting a job with so unpromising a future. "You know," confided the sales executive of the producing company, "the day when the anthracite industry needed real salesmen to market the domestic sizes of coal has gone forever."

The viewpoint expressed was not unusual. Under the conditions which had grown up since the beginning of the present century, the belief was honestly held that the mission of the sales force was to supervise the distribution of such tonnage as the production department could offer and to maintain, as a matter of tradition and routine, a semblance of contact with the retail trade.

The idea that the sales department would ever be called upon to fight for a market was an extravagant hope which might buoy up ambitious competitors, but it was not accepted seriously by the majority of the anthracite interests entrenched behind their quota sheets. Questioned, they could point with confidence to annual production figures and current orders—and a superficial analysis of that data seemed to justify their serenity of mind.

Merchandising Problem Difficult

Today merchandising looms up as one of the biggest problems confronting the anthracite industry. Indeed, the pressure for solution is developing at such a pace that there are many who are ready to proclaim that the problem of selling the coal now transcends in immediate importance the problems of mining it.

And those who take this position do so with no thought of belittling the work of the operating side of the industry or the necessity for a relentless pursuit of continued engineering and mechanical improvement. On the contrary, as the problem of merchandising becomes more clearly understood, still greater progress in modernization as an aid to more effective marketing will be demanded.

The merchandising problem that challenges attention is a question, first, of really selling the industry to the public in an endeavor to check the inroads being made by competitive fuels on the market which the larger sizes of hard coal have long enjoyed and, second, of broadening the domestic demand for pea and, to a lesser extent, for No. 1 buckwheat.

Small Sizes Less Troublesome

Rice and barley are not the troublesome factors they formerly were. They are, of course, still sold at a substantial loss and probably will continue to be so disposed of unless there should be an unlikely and radical upheaval in the comparative price levels of competitive fuels. The widening field of the automatic stoker in general industry, together with the heavy consumption of small sizes at the mines, has measurably changed the situation from that prevailing when Eckley B. Coxe was doing his pioneering work.

If there is a dangerous resistance to the movement of the sizes smaller than No. 1 buckwheat, it is in the distribution of boiler, birdseye and the odd lots shown in the government reports under the catch-all of "other" sizes. (See Table I.) Boiler coal has suffered a progressive decline both in actual tonnage and in the percentage relationship to total shipments since the war. From shipments of 1,689,075 and 1,675,189 gross tons in 1917 and 1918, respectively, the movement dwindled to 170,240 tons in 1923. One explanation given for the sharp decrease is that rice and barley and mixtures of those two sizes have largely pre-empted the industrial market served by boiler coal.

So many sizes enter into the group designated "other" that it is impossible to use the published data as a basis for any detailed analysis of the individual sizes entering into that group. The latest figures available

Table I—Shipments of Anthracite Coal by Size: 1916-1923

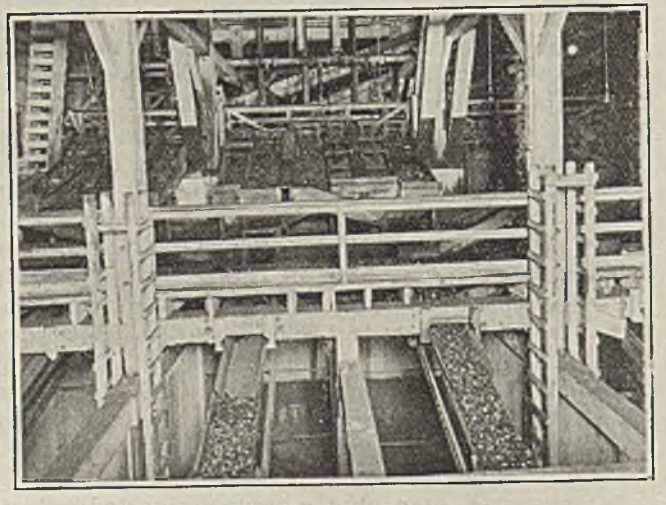
	1916		1917		1918		1919		1920		1921		1922		1923	
	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total	Gross Tons	Per Cent of Total
Lump	119,562	0.2	154,597	0.2	133,529	0.2	26,855	....	33,434	....	12,330	....	4,151	....	7,082	....
Broken	3,543,326	5.2	4,531,889	5.9	4,750,320	6.2	2,861,611	4.2	3,301,578	4.8	2,474,690	3.6	1,639,274	4.0	3,476,582	4.7
Egg	8,487,032	12.6	10,431,455	13.5	10,279,963	13.4	9,701,195	14.2	9,941,584	14.5	10,239,859	14.7	5,487,031	13.4	10,962,994	14.9
Stove	13,598,796	20.1	14,324,505	18.5	13,422,950	17.5	13,354,488	19.6	12,380,630	18.0	14,687,638	21.1	8,193,307	19.9	13,677,384	18.6
Chestnut	14,998,499	22.2	17,753,449	22.8	17,408,141	22.7	17,405,402	25.6	17,327,540	25.2	18,636,682	26.8	10,085,960*	24.6	18,355,255*	25.0
Pea	7,520,804	11.1	6,824,003	8.8	6,471,381	8.4	6,237,398	9.1	5,457,588	8.0	5,865,379	8.4	3,278,136	8.0	5,928,618	8.1
No. 1 Buckwheat	9,569,817	14.2	11,659,176	15.0	10,800,796	14.1	8,574,852	12.5	9,167,934	13.4	9,349,009	13.4	5,537,595	13.5	9,641,571	13.2
No. 2 (Rice)	4,582,720	6.8	6,119,555	7.9	5,396,022	7.0	5,006,736	7.4	5,519,494	7.4	4,515,614	6.5	2,976,287†	7.2	5,371,429	7.3
No. 3 (Barley)	3,342,040	5.0	3,073,684	4.0	5,024,864	6.5	3,503,375	5.2	3,946,317	5.7	3,164,718	4.6	2,841,875	6.9	5,117,585	7.0
Boiler	1,394,876	2.1	1,689,075	2.2	1,675,189	2.2	554,663	0.8	812,363	1.2	278,196	0.4	271,517	0.7	170,240	0.2
Other‡	343,891	0.5	928,655	1.5	1,358,002	1.8	745,720	1.1	722,411	1.1	330,448	0.5	758,705	1.8	718,972	1.0
Total	67,501,363	100.0	77,490,043	100.0	76,721,157	100.0	67,972,295	100.0	68,610,763	100.0	69,554,563	100.0	41,073,838	100.0	73,427,712	100.0

* Includes 579,898 tons of range coal in 1922 and 2,328,843 tons in 1923.
† Includes 581,557 tons of bird's-eye reported by 11 operators.
‡ Includes quantity reported as culm, buckwheat No. 4, buckwheat No. 5, screenings and mine—run in 1917; also settlings, slit, dirt and slush in 1918 and subsequent years.

show that an apparently permanent market that will absorb approximately 720,000 gross tons a year has been found. In the years that shipments have exceeded that figure by any large tonnage, the increase has been due to extraordinary demands for bituminous coal which have thrown the surplus business to the steam sizes of anthracite.

The fact, however, that shipments of this group of miscellaneous small sizes jumped from 343,891 gross tons in 1916 to 928,655 tons in 1917 and, except in 1921, have not fallen below 718,972 tons suggest persuasively that there is a real field for that part of the anthracite output. On the other hand, the small percentage of the total shipments which these sizes make up and the extremely low prices at which they are sold offer no incentive for a vigorous campaign to develop new markets. Mine consumption of any excess production appears to be the best safety valve.

Anthracite distributors frankly confess that they are faced with a serious problem in the sale of pea and No. 1 buckwheat. Heavy accumulations of the first-named size at mine, intermediate and terminal storage yards and the course of prices in competition selling of No. 1 buckwheat sharpen their vision of what must be accomplished. They are helped, not hampered, by tradition, for the history of the anthracite industry has been a record of successful struggles to find a market for the coal that once went to the culm pile. Recognition of the bigger problems of selling the industry as a whole, involving as it does the intangibles of psychology as well as the tangibles of tonnage, has been less general.



Nearing the End of a Long Journey

The coal completing its travel through an anthracite breaker. It has already finished its tortuous travel through crushers, over screens, down spiral chutes and is shown passing from the jigs to the loading bins.

This is not surprising. A trade condition in which a product is habitually bought rather than sold is hardly conducive to the development of a keen merchandising sense and the formulation of broad merchandising policies. That, unfortunately for the hard coal business, has been the condition governing the movement of the bulk of the domestic sizes for nearly a quarter of a century. During the greater part of that period, the industry as a whole from producer to retailer has been nothing but an assemblage of order-takers. Retail expansion, outside of the increased business naturally flowing from a normal growth in population, has been the result of a shifting of patronage. The increase in domestic tonnage since 1900 has been Nature's gift—not the product of superior salesmanship.

Past Conditions Influence Present

The irony in the development of the present unhealthy state lies in the fact that it is the outgrowth of prolonged efforts upon the part of the major producers to correct conditions no less unsound. The movement which reached its climax in 1899-1901 with the acquisition of the Pennsylvania Coal Co., and its affiliated railroad lines for the Erie R.R. and the revitalization of the old Temple Iron Co. to swallow up the dangerous rivalry of the Simpson & Watkins collieries is still a matter of common knowledge. What has been forgotten by many, however, is that that movement initiated by the railroad-coal companies was an attempt to end a history in hard coal which paralleled the history of the bituminous coal trade in recent years, with its upsets, its recurring periods of prosperity, its unwarranted expansion in new mine development and a depression that was inevitable whenever the new tonnage was thrown upon the market. These facts are mentioned, not to satisfy a ghoulish desire to exhume moldy trade skeletons, but because the background of which they are so much a part has been an important factor in creating the merchandising problems of today.

The fundamental thought motivating the long campaign prior to 1901 was that the anthracite business could be put upon a permanently profitable basis only after production has been adjusted to demand. Beginning as far back as 1868, these campaigners and their successors preached the doctrine that the peak of anthracite production was just around the corner, for in the earlier days the prophets of exhaustion could not imagine a demand which would absorb 80 or 90 million net tons of coal in any one year. On the other hand those who have followed have selected as their text the

inability of the production facilities of the mines to support any marked increase in consumer requirements, with the result that, until quite recently, the idea that the domestic market would gobble up every pound of coal that the collieries could offer for shipment permeated the industry.

As indicated in a preceding paragraph, superficially the idea seemed sound. During the 11-year period, 1890-1900, in which the community-of-interests plan among the railroad-coal companies was moving toward its goal, the anthracite mines operated 182 working days per year or 59.09 per cent of the theoretical full-time year. The yearly average fluctuated between 150 days in 1897 and 203 days in 1891. The second 11-year period, 1901-1912,*—the time during which concentrated control was so effective that in 1907 the railroad-coal companies through their own production, tonnage controlled by perpetual contracts and short-term purchases handled 91.3 per cent of the output—the average working time was 205 days or 66.56 per cent of the theoretical full-time year. The yearly averages ranged from 116 days in 1902 to 246 days in 1911.

The grip which the railroad-coal companies acquired upon independent tonnage was broken by the decision of the United States Supreme Court late in 1912 when it ordered the dissolution of the Temple combination and perpetually enjoined the further execution of the 65 per cent tidewater contracts which had tied up a large part of the tonnage not mined by the rail-coal companies. The last of the 65-per cent contracts was abrogated in 1916. But this judicial decree directing a reversion to basic conditions which had in the past proved so disastrous to the major producers is not reflected in the figures for the third period under review. During that period, 1913-23, the average number of working days rose to 254, or 82.47 per cent of the theoretical full-time year. The yearly averages ranged from 151 days in 1922 to 293 days in 1918.

Tonnage naturally responded to the increased working time. It was further augmented by an increase in the total number of employees. The latter figure was highest in 1914. During the first 11 years (1890-1900) the average annual shipments were 42,676,103 gross tons. During the second period the average rose to 59,446,807 gross tons. During the third period (1913-23) the average was 68,064,851 gross tons.

FIGURES DO NOT TELL ALL

At first blush there is nothing in these figures to cause any great ado over the merchandising of anthracite. Taken at their face value the statistics quoted indicate a steady, healthy growth. It is in what the figures do not reveal that encouragement to insomnia may be found. For example, the average number of days worked, compared with the averages reported for the bituminous coal mines of the country, gives substance to the claim that hard-coal production has been stabilized. To a large extent that is true, but stabilization has not traveled as far as the public generally believes. Normal working time at the collieries of the bigger companies exceeds the average, leaving a group of smaller operations that can run only intermittently under existing trade conditions. In part this intermittent operation is chargeable to the difficulties attendant upon the marketing of the steam sizes of anthracite in competition with bituminous coal and fuel oil, but it is also obvious that the current domestic market is not clamoring too loudly for additional tonnages of anthracite.

Another factor that must be considered in any study

*1909 omitted because complete data for that year is not available.

Table II—State Distribution of Anthracite Shipments*

(Excluding Hudson Coal Co. tonnage)

	Coal Year 1916-17	Coal Year 1918-19	Coal Year 1919-20	Coal Year 1920-21	Coal Year 1921-22	Coal Year 1922-23
Alabama	968	187	661	691	2,353	166
Arkansas	891	0	811	802	522	83
California	1,049	0	124	178	66	0
Colorado	299	0	409	30	44	0
Connecticut	2,088,785	2,424,268	1,976,747	1,844,543	1,684,148	1,283,957
Delaware	245,558	244,213	277,399	240,658	236,436	181,156
District of Columbia	542,987	561,450	587,918	531,995	542,001	351,227
Florida	16,603	4,481	12,423	13,446	12,654	7,255
Georgia	22,347	4,493	16,745	11,129	12,376	4,532
Idaho	411	0	201	60	2	0
Illinois	2,178,293	1,737,779	2,084,090	1,957,318	1,819,951	1,541,822
Indiana	332,292	211,186	269,418	212,705	252,318	99,713
Iowa	392,059	155,190	325,455	154,286	171,007	114,792
Kansas	16,765	1,346	11,363	5,638	7,287	1,143
Kentucky	8,767	1,505	4,317	2,161	3,191	1,564
Louisiana	6,091	167	7,213	5,911	9,243	1,339
Maine	508,538	488,288	507,914	503,051	485,453	340,372
Maryland	966,035	1,016,292	1,158,763	1,020,934	920,183	639,750
Massachusetts	4,159,292	4,336,028	2,878,949	3,749,102	3,368,129	2,573,800
Michigan	1,396,747	1,064,053	1,403,934	1,040,375	1,010,534	512,192
Minnesota	1,176,380	966,112	1,152,972	876,072	819,681	764,379
Mississippi	531	47	704	334	316	31
Missouri	132,212	31,423	121,076	58,571	87,614	58,587
Montana	8,859	314	3,531	1,382	1,302	726
Nebraska	130,986	9,756	122,275	50,527	52,711	36,670
New Hampshire	208,114	251,468	288,520	419,506	280,539	231,144
New Jersey	8,760,479	9,876,929	8,984,737	8,673,775	7,817,062	6,422,983
New York	17,930,114	15,794,708	16,167,643	15,000,972	15,817,944	12,310,272
North Carolina	26,815	3,188	18,281	16,730	18,280	7,057
North Dakota	252,904	175,310	136,994	90,507	98,316	51,301
Ohio	466,948	231,168	576,683	401,233	363,407	201,307
Oklahoma	721	2,218	851	1,176	201	390
Oregon	128	0	29	81	98	148
Pennsylvania	11,986,630	13,250,911	13,598,197	12,252,434	12,244,015	9,680,185
Rhode Island	727,455	691,240	606,848	553,273	620,843	372,605
South Carolina	23,473	3,855	23,253	13,152	15,668	7,226
South Dakota	207,793	156,703	167,568	105,853	101,226	67,007
Tennessee	4,519	771	3,695	2,199	2,568	1,202
Texas	6,947	477	6,579	4,327	10,121	3,032
Vermont	107,209	107,281	98,740	83,975	95,284	63,847
Virginia	251,916	162,554	253,667	237,953	223,585	108,073
Washington	1,647	114	840	161	256	64
West Virginia	58,214	61,668	35,996	32,415	20,714	29,181
Wisconsin	1,277,399	1,085,810	1,495,356	1,486,598	1,470,996	969,500
Wyoming	142	0	38	29	68	19
	56,633,312	55,114,951	56,389,927	51,658,248	50,970,713	39,042,599

*Report of Federal Fuel Distributor.

of these figures is the distribtuion of the tonnage. The percentage of increase in shipments during the second period over the average for the first was more than double the percentage increase in population in the United States in 1910 as compared with 1900. The percentage of increase in the third period over the second was less than four-tenths of one per cent under the percentage increase in population in 1920 as compared with 1910. The population increase for the country was 14.9 per cent: domestic anthracite coal shipments increased over 14.5 per cent. The changes in the distribution of coal tonnage during that decade, however, was not in keeping with the sectional increases in population.

Smaller Area of Distribution

In spite of the large increase in the tonnage of coal shipped since 1901, there has been a gradual contraction in the area of distribution. It was not so many years ago that Colorado householders in reasonably comfortable circumstances burned Pennsylvania hard coal in their domestic heating plants. In the year ended March 31, 1922, excluding possible sales by agents of the Hudson Coal Co., only 44 tons were shipped to that state. Before the big strike of 1902 there were thousands of Chicago householders far from the millionaire class who would have nothing in their cellars but anthracite: soft coal was only for the "poor"—with a scornful emphasis upon the characterization of poverty. Today many of their sons and daughters are using semi-bituminous and even high volatile bituminous coals or coke.

Illinois domestic consumers now burn four to five tons of bituminous coal for every ton of anthracite used. In Indiana and Ohio the ratio against hard coal is still greater. Even Pennsylvania is increasing its consumption of bituminous coal for domestic heating. Pittsburgh, ninth in population among American cities, used only 8,526 gross tons of hard coal for domestic purposes in the year ended March 31, 1922—a total exceeded by many New York suburban communities the names of which are little known outside the metropolitan area and closely adjoining territory. When the study is extended to states farther west the comparisons become still more unfavorable to anthracite. The only exceptions are some of the states tributary to the docks on Lake Michigan and Lake Superior. Changes in anthracite distribution currents do not, as a rule, come swiftly; yet, in seven years the competitive forces working for contraction have been such that the percentage of shipments to the three Middle Atlantic states has increased from 68.2 to 70.4 per cent of the total movement.

This loss in business, both actual and potential, was not invited by the anthracite heads. West of the Mississippi River, the increased transportation charges added to the higher cost of coal at the mines have undoubtedly encouraged the buying of fuel nearer the source of consumption. In the East North Central States, the strike of 1902 and the war-time quota system have probably played a bigger part in curtailing the market than the price itself. The strike compelled many consumers to make the acquaintance of substitute fuels. Though many were disgruntled and rushed back to anthracite with renewed appreciation of its virtues, there were many others who learned the knack of successfully burning other coals and refuse to return to the anthracite fold. This same situation was repeated in 1922 although the loss in customers was less marked, because the majority of the producers of competition fuels who were given the chance to break into the biggest anthracite consuming territory were not alive to their opportunities.

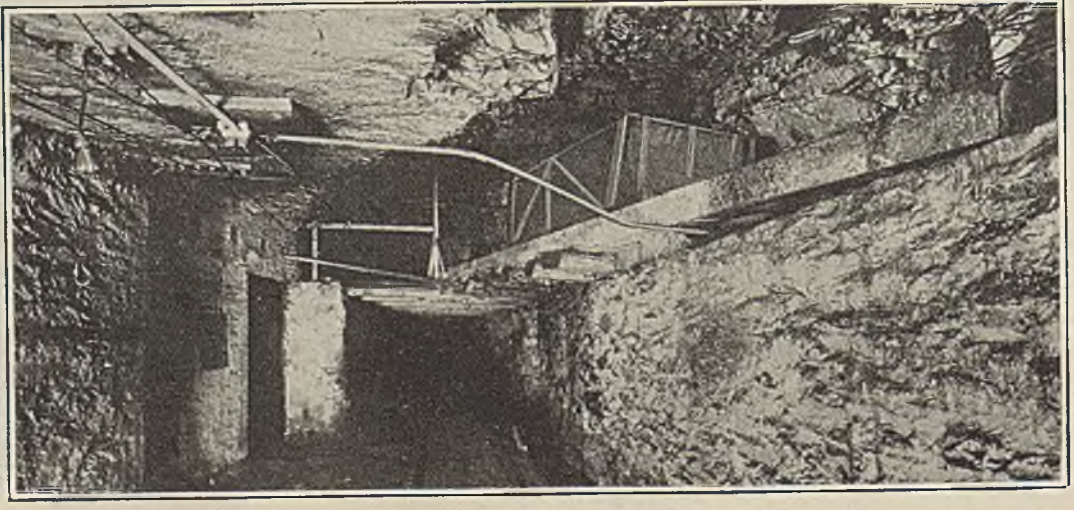
Way Opened to Competition

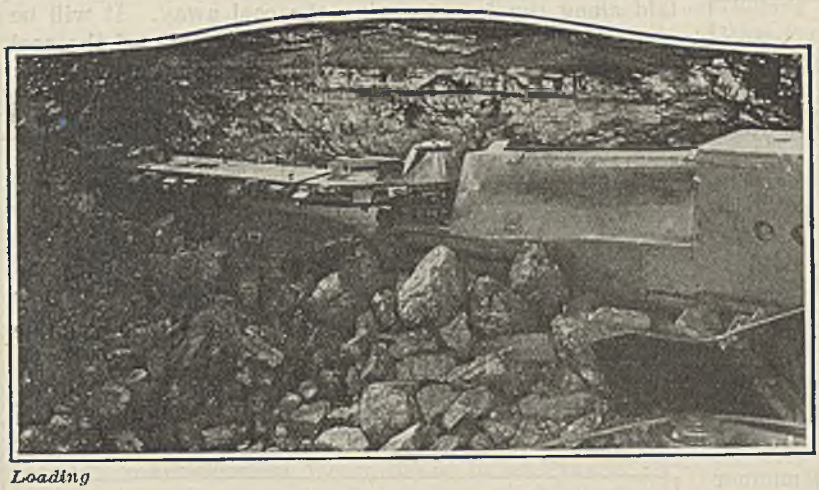
Whether a more vigorous sales policy would have enabled the anthracite producers to make a 100-per cent recovery of the tonnage lost by strikes and war-time interference with normal distribution need not be discussed. The probabilities, however, are in the negative. Whether, if such a recovery had been possible, the machinery of production could have been geared up to take care of the normal and natural expansion is a question that now has only an academic interest. The point to be emphasized is this: Having elected, either voluntarily or through the force of circumstances beyond their control, to concentrate upon a more limited area of distribution, the producers are now more vulnerable to competition.

If that competition grows strong enough to make serious inroads upon the markets in the Middle Atlantic and the New England States, the anthracite producers can entertain little hope of diverting any substantially increased tonnage to the more distant markets in which competition already has them checkmated. With conditions as they are there seems to be no escape from that conclusion. And because there is no escape, the industry must take stock of its assets and liabilities as a basis for determining what its merchandising program must cover.

A Main Haulage Way Near Shaft

Empty is traveling by an elevated road back to a gathering sidetrack. This scene, which is in a mine in the anthracite field, gives a good idea of the quantity of solid masonry work needed to give permanence to underground construction.





Loading

Undercutting

Machine Alternately Cuts And Loads Coal

Undercuts Face and Loads Out Bug Dust — After Shooting Loads Out Loose Coal—Conveyors Take Coal from Machine And Enable It to Work in a Single Place Shift After Shift

By N. D. Levin
Chief Engineer, The Jeffrey Co.,
Columbus, Ohio

IN ORDER to load coal economically by mechanical means it is necessary to keep the machine employed for this purpose operating steadily. This cannot be accomplished unless the coal is withdrawn from the machine as soon as it is loaded. The best way to do this is by the use of conveyors. If the loader works in several different rooms during a shift, it is not economical to provide a conveyor for every room because each would be in use only a small part of the time. Suppose for instance, that the machine is capable of loading out five places per shift; five conveyors would be required each working only one-fifth of the time.

This would entail too big an investment for the work accomplished. In order to keep the cost of the conveyors down to a reasonable figure, the loader should stay in one place and load out five cuts per shift, instead of loading out five different places. But, this cannot be done with an ordinary loading machine, because it would be in the way of the undercutter, and, furthermore would have to lie idle while the cutting machine was working. The logical thing to do would be to combine the cutting and loading machines into one device. Such a machine could be kept busy in one place throughout an entire shift and one shift after another.

The Jeffrey 43-A Shortwaloader is such a machine; it undercuts the coal in exactly the same manner, as a shortwall machine, yet it will cut a place in a much shorter time. The reason for this is that it is already at the face, and no time is lost in loading or unloading from the truck, neither is any time consumed in its transportation from place to place.

When undercutting, no slack has to be shoveled, as the machine loads out its own bug dust. It leaves a cleaner kerf than any other machine because the slack is taken away promptly and the chain does not drag it back into the kerf. This feature is a decided advantage, for it makes the coal shoot better.

While the undercut is being made, holes are drilled and preparations made for shooting the place as soon as the cut is finished. Proper ventilation must be provided to carry away the smoke promptly so that in a few minutes the machine may be sumped into the coal that has been shot down. It is then moved across the face, loading out the coal as it travels.

Machine Works Steadily

It will be noted that this machine works more continuously than those that are moved from place to place. In fact it operates all the time except while coal is being shot unless there is slate to handle. Even this can be loaded into cars or gobbed by the machine. Certain other work is unavoidable, no matter what kind of machinery is used.

The illustration on the right in the headpiece shows the machine as it is arranged when engaged in undercutting. To the left may be seen the two loading bars which are folded back like the blades in a jackknife. To the right appears the main conveyor that picks up the coal from the floor when the machine is used as a loader. This conveyor also loads out the bug dust when undercutting is in progress.

The two loading bars may be swung into place over the lower one. They are used only while loading. They actually dig the coal. It is not necessary to shoot the coal heavily as the machine with the three bars in operation can be sumped into standing coal and will pull it down onto the conveyor, or in front of it, so that it is picked up as the machine is fed sideways.

Fig. 2 shows how the coal is moved up the main conveyor. A rear conveyor is provided that can be

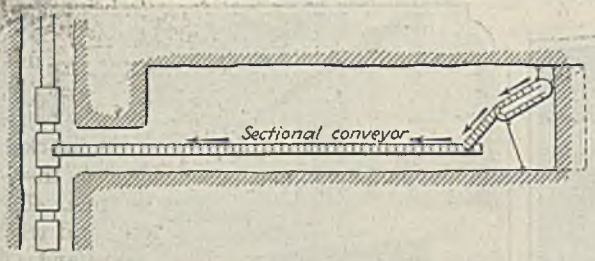


Fig. 1—Used Like Ordinary Shortwall Machine

With rooms up to 25 ft. or even 30 ft. wide, the loader can be used just like a standard shortwall cutter. It loads as will be seen directly into a sectional conveyor.

swung to an angle with the rest of the machine. The end of this conveyor is anchored over the sectional conveyor that carries the coal away, in such a manner that it requires no attention. Thus the machine can be pulled along the face of a room, yet the rear conveyor will always discharge into the other conveyor irrespective of the location of the machine proper.

Auxiliary Conveyor Easily Handled

In entries and rooms up to 25 or even 30 ft. in width this loader is used like an ordinary shortwall machine, yet loads directly into a sectional conveyor (see Fig. 1). In wide rooms the sectional conveyor is laid along a rib as shown in Fig. 3. In this case a small conveyor is employed to carry the coal to the sectional conveyor. This auxiliary conveyor is built in lengths varying by 5 ft.; ordinarily a 20-ft. length is sufficient for this work. It is made light in weight, so that the men can move it around without difficulty.

Fig. 4 shows this loader drawing a rib. A portable conveyor also is used in this kind of work. The sectional conveyor is shown discharging directly into cars. If several loading machines of this type are used in adjacent rooms, the sectional conveyors would discharge into a common gathering conveyor, as otherwise there would be interference in switching cars.

A loader of this type at work on a face, 200 to 300 ft. long, is shown in Fig. 5. The coal is first undercut with a short- or longwall machine, shot down, and then loaded out with this loader. A sectional conveyor is laid along the face to carry the coal away. It will be noted that in this case the machine is back of the coal and requires no extra space. The sectional conveyor is laid as close to the face as practicable; as a matter of fact, it can act as a sort of barrier when the coal is being shot, preventing it from rolling out too far from the face. Some of it may even go directly into the conveyor.

Placed at Angle to Face

In Fig. 6 the machine is shown at an angle to the face. If used in this manner, some time would be saved in setting jacks and handling the machine. The machine may be placed at right angles to the face (see Fig. 7), but there are few mines where the roof conditions are such that the machine can be used in this manner.

Different coal fields, and, in many cases, different

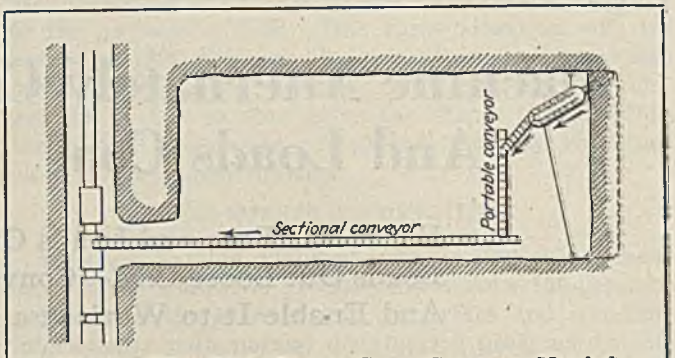


Fig. 3—With Wide Rooms Cross Conveyor Needed

If rooms are driven over 30 ft. wide, it is necessary to install a short length of portable conveyor to feed into the sectional conveyor whenever the machine is at the far side of the room.

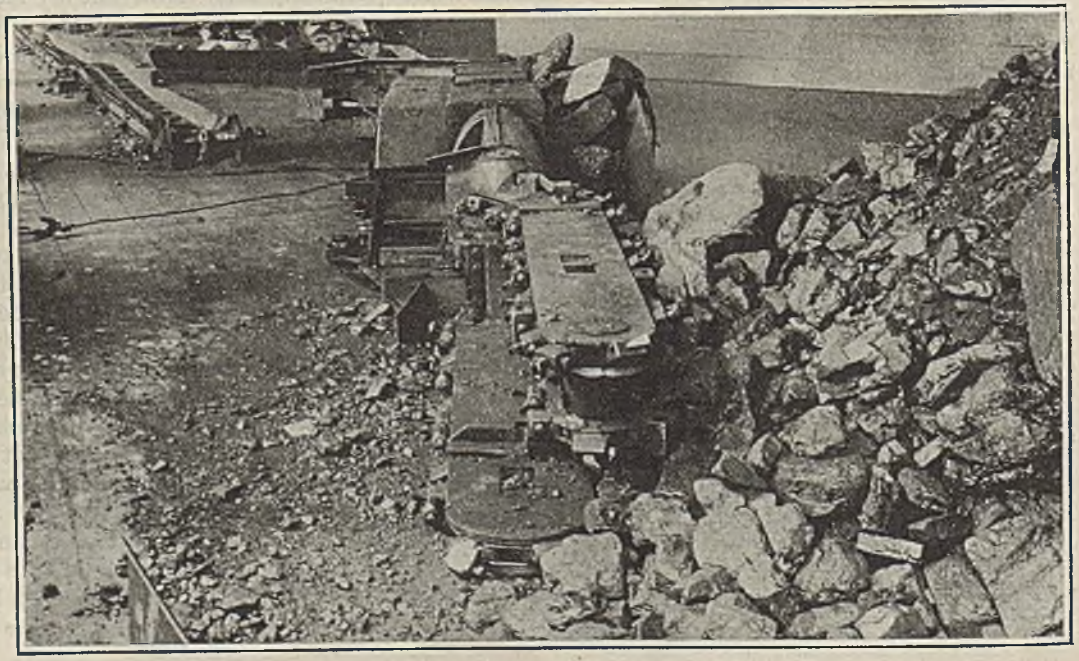
mines in the same field, have conditions peculiar to themselves; the best system of mining, therefore, must be determined for each particular operation. In some mines it may be found economical to employ several systems; a part of the mine may be worked room-and-pillar, another portion by slabbing of ribs and in still another section some form of longwall operation may be the most practicable. The Shortwaloader can be used with equal advantage anywhere in such a mine.

No matter what system of mining is followed, the

FIG. 2

Loading Coal

The two loading bars have been swung into position, and as they operate they assist the undercutter bar in shifting the coal onto the conveyor. Each of these bars will cut the coal provided the material being loaded resists movement but, broken as it is, it is merely shifted gently by the motion of the bits and crowded up onto the conveyor of the machine.



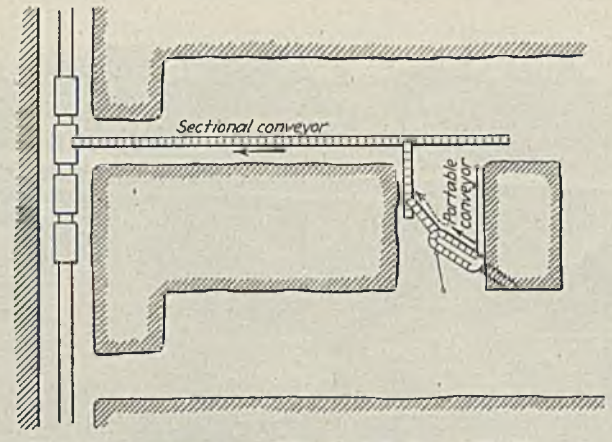


Fig. 4—Arrangement Where Rib Is to Be Drawn

The portable conveyor makes it easy to withdraw even a wide pillar. Here the loader is shown working with the protection of a stump at the end of the pillar. The portable conveyor is in 5-ft. lengths.

machine should stay at the same working face shift after shift, until it is worked out. A conveyor must be provided to carry the coal away from the machine. If the loader is employed in a room that yields 30 tons for each undercut of the face, a trip of cars holding this much coal should be provided and moved slowly past the discharge end of the conveyor, thus allowing the machine to load the place out without stopping. It is

Fig. 5—Machine Loader Working on a Long Face

With a long face 400 or 500 ft. in length the sectional conveyor and loader can be put parallel to the face, and the loader can be made to load into the conveyor.

not practicable with this machine to bring cars into a room and load them one at a time.

When loading on a longwall face, the machine should discharge into a conveyor. In such a case, a constant supply of cars must be available at the discharge end of the conveyor throughout the entire shift. Conveyors used in connection with this loader not only allow the machine to work steadily all day, but reduce the cost of

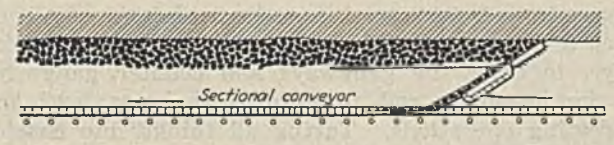


Fig. 6—Machine Set at Angle to Long Face

With this arrangement the loader is handled more easily, the jacks not requiring such frequent setting. However, the roof must be stronger than is necessary when the machine is set parallel to the face.

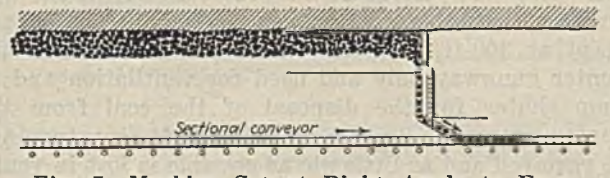


Fig. 7—Machine Set at Right Angle to Face

Few roofs are strong enough to place the machine, as is shown here, at right angles to the face, just as one would set it in loading out where there is a room because of more pillar protection.

gathering and track laying, and where several loaders of this type are employed a conveyor system will make it possible to obtain a large output from a small territory.

Conveyors used with machines of this kind, whether they are employed in driving entries or in working rooms, must be constructed in such a manner that a section can be added in the shortest possible time. This should be done after the undercut is finished, and while the machine is being pulled back to the right-hand rib. A suitable conveyor for use in connection with the Shortwaloader is built by the same manufacturer. This conveyor can be extended in a shorter time than the ordinary track could be advanced.

Methane as Likely as Natural Gas to Be Ignited by Exposed Filament

Tests recently have been conducted by the Bureau of Mines on the ignition hazard of exposing heated filaments of electric mine-lamp bulbs in a explosive mixture of methane and air. This investigation was undertaken in order to settle a question that had arisen in connection with the safety of miners' electric lamps.

For several years, in view of former studies made by the Bureau and reported in Bulletin 52, the fact that the heated filaments of even low voltage, low candle-power bulbs constitute a danger, was generally accepted by the Bureau's engineers. These early tests, as well as subsequent trials, were conducted with Pittsburgh natural gas as the testing medium.

In nearly all coal mines the explosive gas found is methane. This gas is known to be somewhat less sensitive to ignition than natural gas which contains, in addition to methane, one or more of the higher hydrocarbons. Therefore, the question naturally arose whether heated filaments, which regularly ignited natural gas, would also ignite methane. If not, then perhaps the Bureau had taken unnecessary precautions in requiring all permissible electric lamps designed for use in mines to be equipped with a safety device.

The present study, conducted by R. D. Leitch, A. B. Hooker, and W. P. Yant, conclusively settles this question. Bulbs that had previously proved dangerous when unprotected in natural gas atmospheres were used in the investigation, and methane was substituted for natural gas as the testing medium; also a few check tests were made using natural gas.

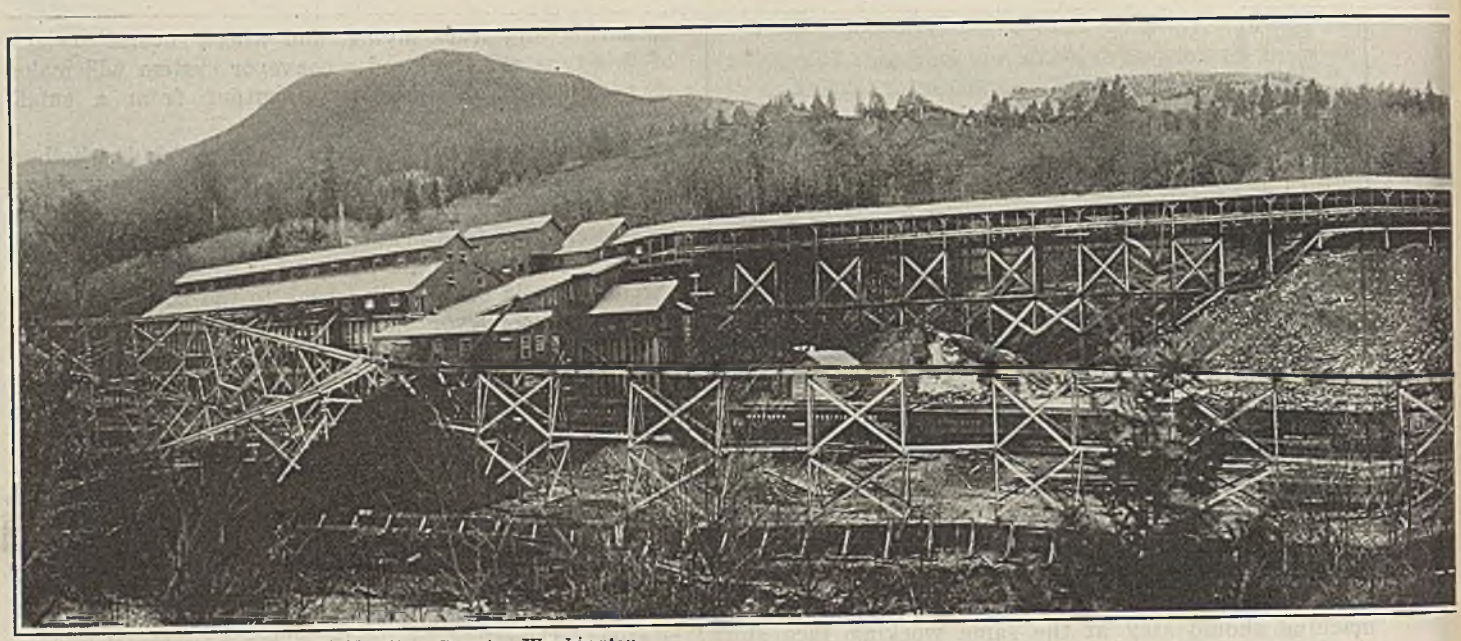
Three types of mine-lamp bulbs were tested—namely, BM-19, 2-volt, 0.7 to 0.9-ampere bulbs; BM-18, 2½-volt, 1.1-ampere bulbs; and BM-17, 4-volt, 0.5-ampere bulbs. The methane used was prepared by liquefaction and fractional distillation of natural gas at approximately —162 deg. C. The natural gas used was that which is supplied to the city of Pittsburgh.

The results of the tests in both methane and natural gas are summarized in the following table.

	—Tests in Methane—		Tests in Natural Gas	
Type of Bulbs	No. of Tests Made	No. of Ignitions	No. of Tests Made	No. of Ignitions
BM-19a	11	None	3	None
BM-19b	16	9	2	2
BM-18c	21	12	9	5
BM-17b	7	7	6	6

a, bulbs energized at voltages below normal; *b*, bulbs energized at normal voltages; *c*, bulbs energized at normal and slightly above normal voltage.

This table shows that practically the same results are obtained with methane and natural gas, and that any difference in sensitiveness to ignition between these two gases cannot be shown within the accuracy of tests of this nature.



Issaquah Mine in Newcastle Field, King County, Washington

Newcastle Mine Operated on Retreating System

Takes Five Years to Make Level Ready for the Extraction of Coal—Crosscuts Driven in Gangways 300 Ft. Apart, Ventilation Being Provided by Blowers and Air Boxes—Blackdamp Kept on Tap

By S. H. Ash
Superintendent, Pacific Coast Coal Co.,
Carbonado, Wash.

IN KING COUNTY, Washington, 22 miles by rail from Seattle on the Pacific Coast R.R. is located the Newcastle mine. At present, its output is about 900 tons of coal per 8-hr. shift, 300 men being employed. Five workable seams are present on the property, which is distributed over three sections. The seams have an average dip of 40 deg. and are separated by the usual shales and sandstones. The coal beds worked are shown in Figs. 1 and 2.

The geology of this area has been fully described by George Watkin Evans in an article entitled "The Coal Fields of King County," which appeared in the Washington Geological Survey Bulletin No. 3. The coal mined is sub-bituminous and finds its principal market in the Puget Sound cities and nearby regions.

As the principal operations in the Newcastle mine are confined to the Muldoon seam and, to a lesser extent, the No. 4 seam and as the methods of mining are identical in both, the description of the Muldoon workings will apply to those in No. 4 seam. Sections of these two coal beds are shown in Fig. 6.

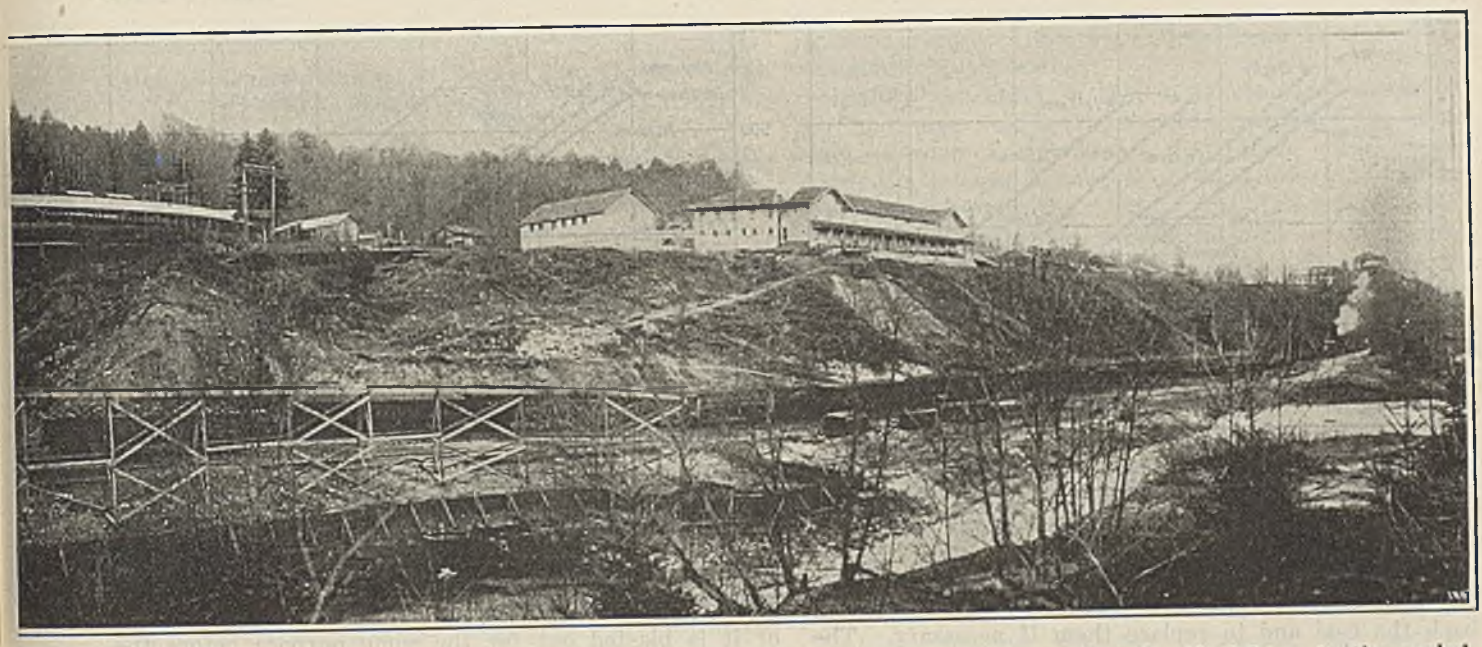
The character of the walls and the coal of the Muldoon and No. 4 seams are such that breasts varying in width from 15 to 70 ft., can be mined to advantage with a lift from 400 to 800 ft. on the water level.

Experience has demonstrated that this mine cannot, under present conditions, be economically worked mining the coal on the pitch by the advancing method, for the walls, although excellent so long as only the gangways and counter gangways are driven, become very bad and the gangways are squeezed and expensive to maintain if kept open for a long time. The coal in the gangways and counter stumps becomes crushed to such an extent as to be too fine to be profitably mined; the worked-out areas are apt to fire, due to spontaneous combustion, and the amount of blackdamp evolved and the difficulties encountered in keeping the airways open make ventilation expensive.

For these reasons, this mine has been worked on the retreating system. The lateral extent of the mine workings on the 4th level was 8,000 ft. from the slope on the east, and 4,500 ft. on the west side. The mine has been worked to the 4th level from the present slope, which is about 1,760 ft. long and dips about 40 deg. (see Figs. 1 and 2). The first level worked was driven at water level. It takes about five years to make preparations for a retreat, namely, to sink the slope one level, a distance of 500 ft., to complete the main airways, to drive the gangways and counter gangways to the boundary and to prepare the new level for retreating operations. Taking all things into consideration, the gangways are advanced at the rate of about 2,000 ft. per year. No deviation is made from the ordinary method of gangway and counter-gangway driving already discussed in previous articles in this series, with the exception that chutes are not opened except at 300-ft. intervals, these being driven to the counter gangway only and used for ventilation and as dump chutes for the disposal of the coal from the counter gangway. By this procedure, but few stoppings are required and as little air as possible is lost in ventilating the inside end of the workings.

While developing ahead of the last dump chute, the gangway is ventilated by electrically driven booster

Final part of article entitled, "System of Coal Mining in Western Washington" presented at the winter meeting of the American Institute of Mining & Metallurgical Engineers, held Feb. 16-19 in New York City. The three previous installments appeared Feb. 26, March 19 and March 26 on pp. 325-328, 425-430 and 465-470, respectively.



fans and air boxes. The dump chutes are so spaced that they can be used later for regular chutes.

It has been found that on this dip a 70-ft. pillar can be worked, 35 ft. on each side, from 20-ft. breasts. The breasts are therefore opened on 90-ft. centers, except where an old dump chute is utilized, in which case the pillar is proportioned to suit the conditions. The system of working is shown in Fig. 3.

As shown in that illustration, the first breast is driven at or near the face of the gangway, although it is preferable to have the gangway extended far enough beyond the last chute to provide room for several cars to be loaded at that point. Breast 2 is also started and the relative positions of the breasts advancing up the pitch are shown by breasts 4 to 10, breast 4 having reached its limit, which is from 50 to 75 ft. from the low rib of the old gangway above. The chain pillar is varied in pitch length according to the dip of the seam, the tendency of the coal to run, the nearness of the workings to the face of the old gangway, and the quantity of water which is running out of that gangway and would have to be pumped if the pillar did not remain waterproof. The two principal reasons, in their order of importance, for leaving this chain pillar are to confine as much water as possible on the level above and to serve as a barrier for the blackdamp in the old workings.

A level is always sealed off near the main airway and slope, so as to confine the blackdamp to the sealed-off areas. Advantage is taken of this accumulation of blackdamp by placing pipes, with valves and hose attachment, at these stoppings so that, in case of a fire, the blackdamp, which in most instances is under greater pressure than that of the mine atmosphere, can be made to flow effectively through pipes to any desired part of the mine. Thus the workings near the stoppings can readily be flooded with this inert gas.

Brattice Separates 5-Ft. Manway

Breasts are driven 10 ft. wide to a point about 10 ft. from the second crosscut, where they are widened to 20 ft. The manway, which is provided with a ladder, also serves as a passage for air, timber, compressed air and water pipes. This manway is made about 5 ft. wide and is separated from the coal side of the breast by a board brattice. To prevent breakage and aid ventilation the coal side of the "chute" is kept full of loose coal. that is worked full, up to the top crosscut outby. As no traveling is done in this system, except through the open crosscut at the top and the bottom counter gangway, only one battery or bulkhead, is ordinarily used; this is placed at the counter gangway, as shown in breast 3.

However, unless the chute can be kept full, it is advisable to have bulkheads above the counter gangway at every crosscut to eliminate the breakage of the

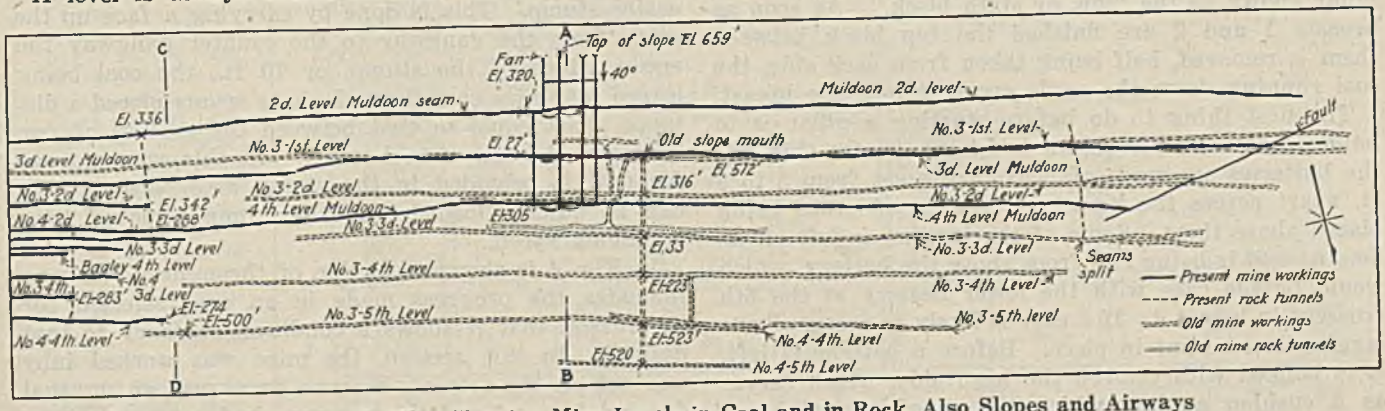


Fig. 1—Newcastle Mine Showing Mine Levels in Coal and in Rock, Also Slopes and Airways

The coal pitches about 40 deg., or 84 per cent, so that, whereas the elevation of the top of one slope is 659 ft. above sea level, the 5th level of No. 4 seam, where it leaves the slope, is 523 ft. below the level of the sea. It will be noted how far a level is driven before it is regarded as ready for retreat. On the east side the lateral extent of the mine workings, as measured from the slope was on the 4th level, 8,000 ft. The distance was 4,500 ft. on the west side.

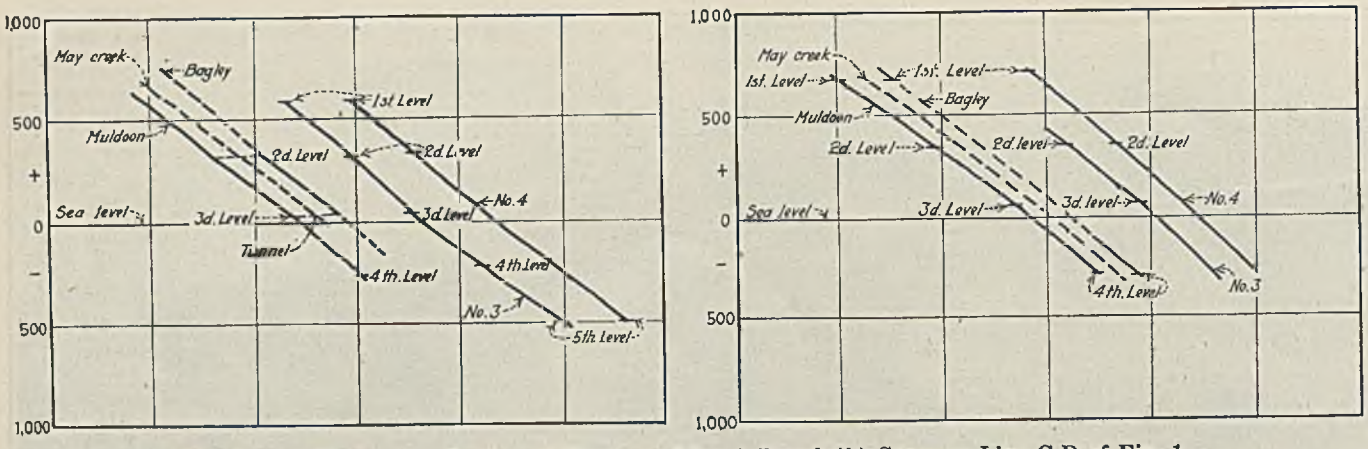


Fig. 2—(a) Transverse Section of Strata on Line A B and (b) Same on Line C D of Fig. 1

It will be noted that the measures all pitch with remarkable regularity, all parts of all seams dipping at the same angle to the vertical. The Muldoon though the lowest seam worked is not mined to any profounder depth than Nos. 3 and 4 which are higher measures geologically.

coal. If there is enough coal to keep the entire coal-side full it is easy to remove the bulkhead boards holding back the coal and to replace them if necessary. The main objection to having too many bulkheads is the time lost as the result of large chunks, timber, etc., becoming lodged at the bulkheads when running the coal. Wings placed at each crosscut deflect any loose coal from the manway side to the coal side of the breast, a small opening in the brattice being left for the passage of the coal.

Sheet Iron in Angle Chutes

Above the second crosscut, and sometimes above the counter gangway, all crosscuts are driven on an angle across the pitch, half way from each side of the block. These are driven as angle chutes 10 ft. wide on a pitch sufficient for the coal to run, generally using sheet iron. They serve not only the usual functions of a crosscut but as wings or coal chutes when drawing the pillars, for which purpose an ordinary crosscut is worthless.

If such an opening, called a wing, is driven at the time a pillar is being removed, the drawing of the pillars is slowed down materially. They are longer and cost more to drive than a level crosscut, but the cost of a wing and a level crosscut more than offsets this additional first cost. The only reason for driving the second crosscut level is to get a hole through for ventilating as rapidly as possible, so as to afford storage room for coal, which otherwise could not be provided.

Between breasts 4 and 5 is noted that piece of the pillar known as the "top, or sixth block." As soon as breasts 1 and 2 are finished the top block between them is removed, half being taken from each side, the coal running down the angle crosscut into the breast.

The first thing to do before starting a pillar is to build a battery as is shown in breast 4. On this dip, the batteries are made of heavy posts set from 3 to 5 ft. apart across the breast, a lagging of props being placed above them. Some of the lagging is left off as long as coal is being run from above the battery, which would be the case with the lower battery at the 5th crosscut in breast 4. If a cave is likely to occur, all the lagging can be put in place. Before a battery is left, it is banked with coal on the high side, which serves as a cushion against which the caved material can land. The battery protects the pillarmen from the danger of being shut off by a cave; in addition, the small block *X* is used. This piece of coal is left in, and when the squeeze comes upon it, it crushes and runs against the battery, thus serving as a cushion; or it is blasted out for the same purpose before the battery is left. The pillar is then breasted as shown in the third block between breasts 2 and 3, and the top block between breasts 4 and 5, but before it is advanced to any extent, an opening is made to the breast for ventilation.

Whenever possible, the operations are carried on simultaneously from both sides of the block; if not, the procedure shown in the third block between breasts 2 and 3 is followed. A small pillar of coal, *Y*, in breast 2, is left to hold back any cave that may occur in the breast and as a support for the roof. This may or may not be recovered, depending on the state of affairs existing in the old breast. The pillar face advances as a breast, shown in the top block between breasts 4 and 5 and the fourth block between breasts 2 and 3.

The custom here, and throughout the district, is to call a working place a "chute, breast, or room" as long as the face is advancing, is to be advanced, or is standing idle with the pillars still in. As soon as work commences on the removal of the coal between chutes the working place is called a "pillar"; and breasts 1 to 4 would be known as pillar 1, pillar, 2, etc. The pillar drawings retreat toward the gangway and the workings proceed outby.

Extracting Gangway Stumps

The gangway stumps are extracted as soon as block 1 is removed. The method used is to breast up the entire stump. This is done by carrying a face up the pitch from the gangway to the counter gangway the entire width of the stump, or 70 ft., the coal being loaded into mine cars through chute spouts placed a distance apart equal to that between the centers of two cars placed bumper to bumper. In this way storage for coal is provided in the stump area, several cars can be quickly loaded, and the stump removed with maximum speed.

In Fig. 4 is shown a section of the mine. The map indicates the progress made in an area selected for the reason that it shows a condition contrary to that desired. In this section, the mine was worked inby and not on the retreat, because there was an unusual demand for coal and the gangway had not reached its limit. The mine of which these workings were a part was closed down for four months, during which interval the pitch workings caved tight although timbered

Table 1—Average Number of Square Feet Cut By Mining Machine, Muldoon and No. 4 Seam

Width, Ft.	Based on 8-hr. shift Area Cut Daily Sq.Ft.	Area Cut Sq.Ft., per Man-Day
Breasts		
40	120 (3 men)	40
20	100 (2 men)	50
Chutes and Angle Crosscuts		
10	60 (2 men)	30

When using the machines a breast, 15 ft. wide is inadvisible, as it is too wide for a bad roof and too narrow for a good one. These averages include time taken up in the working place for timber packing, setting timber, chute building and all other work necessary in the place. The results obtained when timber packers were used were much less.

with four-piece sets of 8 by 8-in. timbers, the collar being 10 ft. long and supported by three posts, placed about 6 ft. apart on the pitch, lagged between, and collars end to end across the breasts. The counter gangway was reopened and kept open with great difficulty, and the gangway has had to be retimbered several times. These conditions on the gangway prove that this seam of coal cannot be worked advancing along a gangway of normal length even if large pillars are left in and only the breasts worked. The pillars left in became so badly crushed that the coal could not be profitably mined.

Unless the roof is exceptionally good and likely to remain so, the gangways are timbered with three-piece sets spaced 7½ ft. between notches at the collar, 7 ft. in the clear above the rail to the underside of the collar, and 11 ft. in the clear between the legs at the rail.

Where the roof is good, single-stick timbering is used on the pitch. The general practice is to use sawed timber of not less than 7x7-in. cross-section, and to place cap pieces over each prop. If the roof is bad, four-piece sets are used as already has been described.

MINERS CARRY TIMBER

All timber used on the pitch is carried by the miners. There are distinct advantages in having this work done by the miners when the latter are working on the contract system, as at this mine. Then each working place gets its proper supply of timber as needed; there are no timber packers; there are no delays on the pitch due to the passing of timbers; there is no obstruction of crosscuts due to timber being stored in them; and a more accurate record of the timber used and its distribution is possible.

During the shift in which no coal is transported all the timber used by the miners is placed on the gangway in front of each breast, and before going up the pitch the miners remove most of it, placing it above the trapdoors in the chute. The miners file their orders for the timber needed in each working place with the district fireboss, who in turn delivers it to the timber-distribution supervisor, who sees that the order is filled. The successful way of handling this system is to make it a part of the contract with the miner, who is paid for packing the timber and putting it in place, but receives no payment for timber unless he erects it.

All mining is done on the contract system, both cutting machines and coal picks being used. As the coal works freely when the roof pressure is brought into play, it is not necessary to undercut or shear the coal in the pillar workings with machines, except when driving pillar wings, removing the top block or starting the pillar face in the block. The machines are not used in driving ordinary crosscuts and counter gangways, where the shooting is done on the solid and where insufficient room is provided to use a machine to advantage. They are used at times in the gangway and always in the breasts, chutes, and angle crosscuts.

Table 2—Average Number of Square Feet Cut By Mining Machines, Muldoon Seam

When not timbered with sets; 8-hr. shift.

Width, Ft.	Area Cut Daily Sq.Ft.	Area Cut Sq.Ft. per Man-Day
Breasts		
40	240 (3 men)	80
20	160 (2 men)	80
15	130 (2 men)	65
Chutes		
10	100 (2 men)	50

The averages include time taken up for chute building, timbering, timber packing and all other necessary work.

Since the introduction of fuel oil and the development of hydro-electric power, markets for steam sizes of coals of the sub-bituminous rank have been closed, necessitating the marketing of this coal as a domestic fuel. This makes it necessary to produce the larger sizes

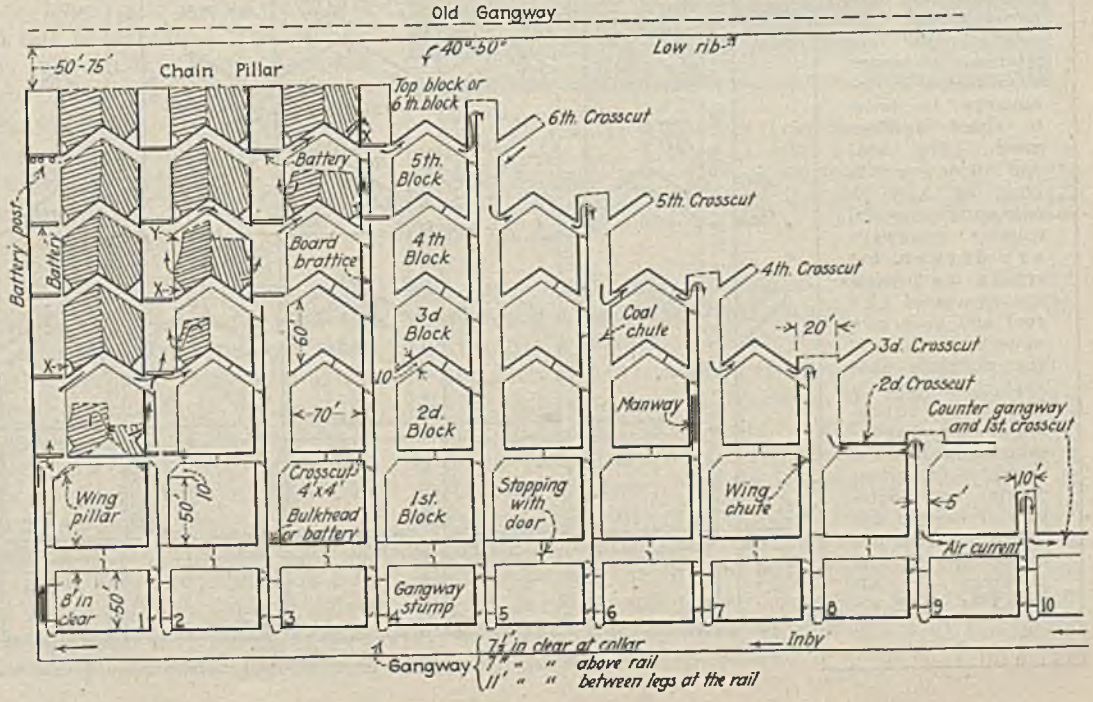


FIG. 3

Pillar Drawing

A gangway and counter gangway have been driven from the slope, which is not shown but is to the right of the illustration. This gangway ends as at the left edge of the drawing. Not till that point was reached was the winning of coal seriously begun. When the end of the road is attained, or at little before, chutes are driven up from the gangway and breasts started. As these reach their limit the pillars are brought back, being worked on both sides.

in greater percentage. As the mines increase in depth, this becomes more difficult, and the cost of production increases with the depth unless something is done to offset the added expense.

With the substitution of high explosives for black powder, with a type of miner not skilled in the use of a pick and with more coal produced by solid shooting, which does not make large sizes of coal, something had to be done to give more lump coal. At the same time a larger production was needed. To have improved the size of the product by hand cutting would have reduced the tonnage.

Machines Show Profit

These circumstances have necessitated the extensive use of machines for doing the work formerly done by skilled miners, namely, mining the coal at the face instead of shooting off the solid, also doing it at a greater rate than is possible for even a skilled pick miner. It is a fact that in production alone, with a very keen market, even for fine sizes, the use of machines has decided the difference between the black and red side of the cost sheet of this mine, because of the greater progress made.

The machine used is the Sullivan or Ingersoll "Post Puncher." The method of setting up the machine is essentially the same regardless of where it is to operate, but its position is a matter of much importance. In the Muldoon seam it is advisable to use breasts 20 ft. wide, although 40-ft. breasts have been used on the upper levels and on the present level in No. 4 seam. In a 20-ft. breast, there is plenty of room for two miners and not enough for three to work to the best advantage. They divide their work in such a way that one operates and takes care of the machine, and the other packs and sets the timber and assists the machine miner in moving the heavy part of the machine. They work jointly in all operations to their best advantage and divide the earnings of the place equally.

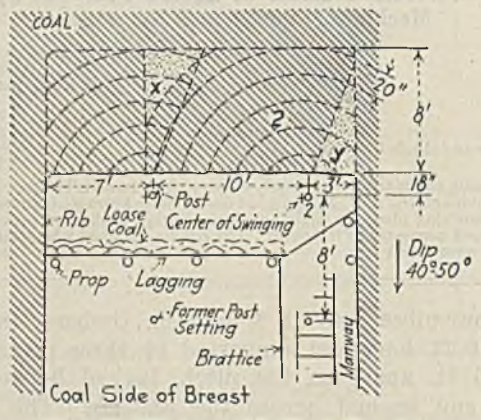


Fig. 5—Mining with Post Puncher

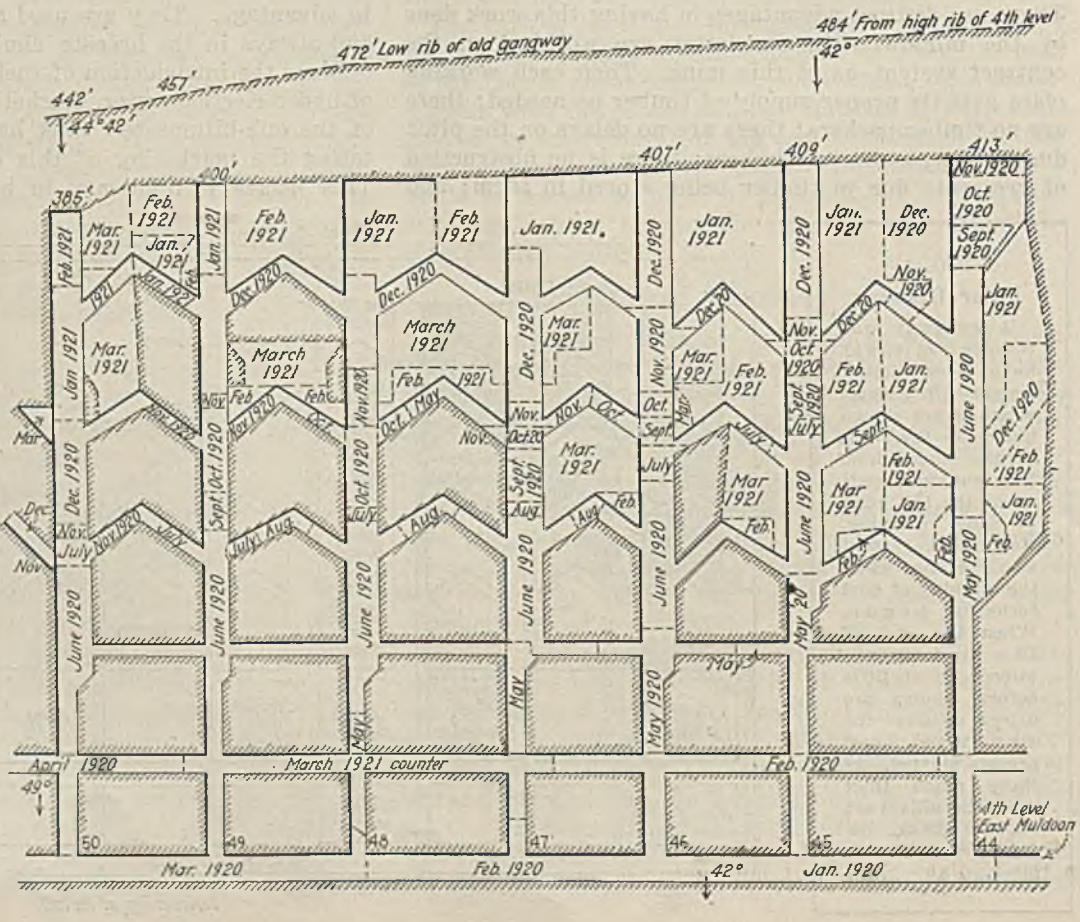
Two sets of the machine are made every time the face is cut, the puncher taking radial cuts using different lengths of extension bars. Where there is danger that the coal will free itself and bury the man working the machine, wedges are left as at *X* and *Y*.

As shown in Fig. 5, the first cut is made from a post set from 18 in. to 2½ ft. from the face and about 7 ft. from the rib of the coal side of the breast, although, if the dip of the seam and character of the bed are such that the coal is not apt to break out without warning, the cuts are started alternately at each rib to avoid, as far as possible, the moving of the machine. It is good practice to work toward the manway side of the breast, and the machine is placed to suit the conditions in the place.

FIG. 4

A Working That Failed

Despite the size of the pillars this section of the mine caved when it was left idle for four months, it having been worked on the advance in order to speed development. The roof and floor remain good as long as only gangways and counter gangways are driven, but when the breasts are excavated the roof and floor give much trouble, if the workings are kept open for a long time. Crushing of pillars, spontaneous combustion, evolution of carbon dioxide and depletion of oxygen are difficulties that are inevitable if the workings are allowed to stand.



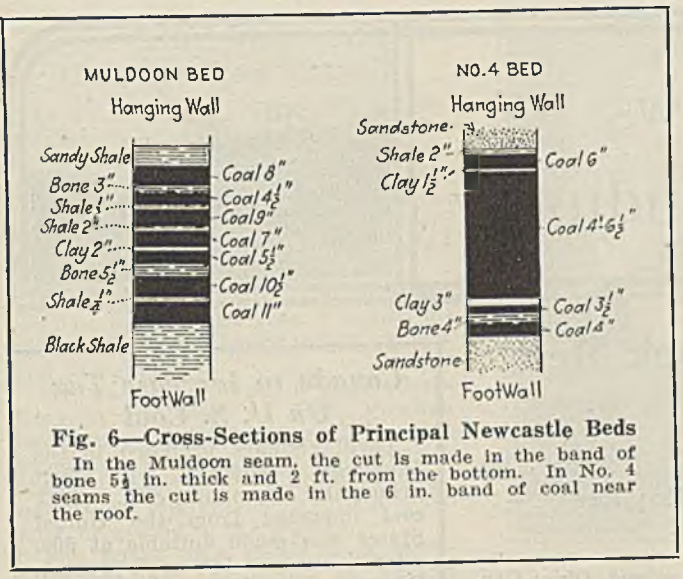


Fig. 6—Cross-Sections of Principal Newcastle Beds

In the Muldoon seam, the cut is made in the band of bone 5½ in. thick and 2 ft. from the bottom. In No. 4 seams the cut is made in the 6 in. band of coal near the roof.

A cut 8 ft. in depth is put in, using different lengths of extension bars. One miner operates the machine, swinging it by a worm crank, with one hand, and feeding the cylinder forward with the other. The cuttings fall out of the kerf because of the dip of the seam. Time is saved if two posts and sets of blocking are available, so that while the machine runner is making the cut the other miner can set the second post. When the rib cut is completed the transfer of the machine, which weighs about 225 lb., to the other post is quickly made, and the second cut put in.

Precaution in Placing Posts

The machine and posts remain in the breast near the face until the breast is completed, as there is no shooting of coal to injure the machine nor loading of coal to interfere with it. The main precaution to be observed is the placing of the post so that the coal will not be apt to break out and catch the machine runner. Sufficient coal is kept near the face, by means of lagging above the props, to furnish solid footing for the machine runner. If there is likely to be any danger of the coal breaking out, the pieces of coal *X* and *Y* will not be mined; probably they will have to be blasted out.

In mining the Muldoon seam, the cut is made in the band of bone about 5½ in. thick and 2 ft. from the bottom (see Fig. 6). In No. 4 seam, the cut is made in the 6-in. piece of coal near the roof. The position of the swinging gear on the post depends on whether the coal is mined near the top or bottom. Little blasting is required, for the coal once mined soon works freely and can be easily taken down with a pick. If shooting is required, the shots are light.

Long-Face Mining in Thin Tennessee Bed

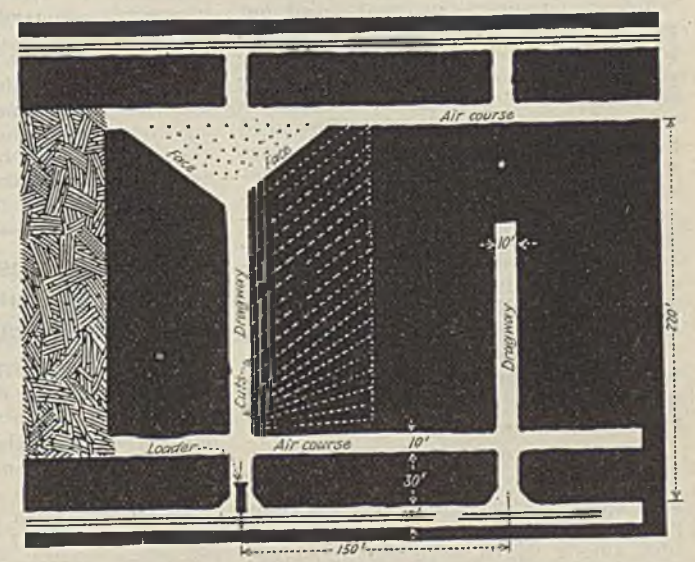
Mechanical loading of coal has come to stay. To make this type of operation most effective, however, it is necessary that the machine or mechanical device employed shall operate on a face longer than that afforded by an ordinary room. The accompanying illustration from *Electrical Mining* shows how the Black Diamond Collieries Co. develops its workings in mines Nos. 1 and 5 near Coal Creek, Tenn., for the operation of Goodman entryloaders.

Cross entries are driven in pairs 40 ft. apart, each passage being 10 ft. wide. One serves as an aircourse and the other as a haulageway. The distance between adjacent aircourses is made 180 ft. and 10 ft. breakthroughs or, as they are here called, dragways are driven between them on 150 ft. centers. The coal to be machine loaded is thus split up into blocks each 140 x 180 ft. The entryloader is set up where the dragway debouches into the haulageway. Where this dragway enters the second or farther aircourse the corners of the opening are cut away thus forming a working face for the coal cutter and scoop.

Faces Cut Alternately

From the faces thus formed successive cuts are taken alternately on approximately a 45-deg. angle with the dragway until the cuts approach the aircourse when their angularity is gradually increased to approximately 90 deg. The cuts along the slant faces range from about 100 ft. in length on the 45-deg. angle down to 70 ft. when the cut parallels the aircourse. Alternate cutting permits one face to be loaded out while the other is being undermined and shot down.

The coal bed here worked is 40 in. thick and is undercut to a depth of 7½ ft. Shot holes are drilled on 8-ft. centers and alternate 5½ and 6½ ft. in depth. All of these holes "look" toward the dragway. Top is brushed in the haulage roads but not in the other passages or



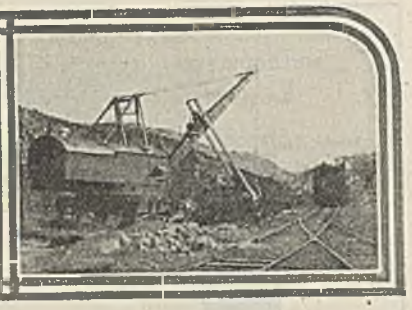
How Coal Is Mined in a Tennessee Operation

This illustrates the modern practice of driving narrow work with long distances between centers and then withdrawing the big pillars left. Many of the systems now in use call for two classes of mechanical loading equipment—one suited to the most restricted space with tracks and one to operation in large spaces without tracks.

along the faces. The cars used are of two different models and heights but this entails no difficulty with the loading apparatus.

The entryloader is kept in the dragway entrance until all coal tributary to that dragway has been loaded out. Each trip consists of 15 cars. Practically all the coal is being recovered by the methods here employed, and no trouble is experienced in controlling the roof. It is claimed that costs of production have been materially lessened by the adoption of this method of mining which possesses the further advantages of the elimination of yardage and tracks in rooms, a concentration of workings, simplification of haulage, and a greater speed of production.

News Of the Industry



Trade Commission Charges Dock Men Suppress Competition

Members of Northwest Association Declared Guilty of Long List of Improper Practices—Order Issued Today Requires Operators to Cease Illegal Acts

Washington, D. C., March 31.—The Northwestern Coal Dock Operators' Association is guilty of a long list of improper practices in an effort to restrain and suppress competition in the sale of anthracite and bituminous coal at wholesale and retail, in the opinion of the Federal Trade Commission. Under date of April 2 the commission issued an order requiring the association to cease and desist from the practices which it enumerates in great detail, but greatest emphasis is placed on the following acts: Through its secretary consolidating and then disseminating to members of respondent association the information heretofore furnished said secretary by respondent companies relating to cost of operation of wholesale and retail departments; orders received and shipments made, together with price received and class of customer sold; contracts entered into; accounts past due, equipment of retail dealers; violation of anti-diversion clause of contracts; sales made to retail dealers under contract, and other similar or equivalent matters brought to the attention of respondent association by respondent companies.

Variety of Methods Used

The findings recite numerous methods used by the respondents to attain their purpose of eliminating price competition, among which were the following: Refusing to grant commissions or concessions to jobbers, line yard companies and other retail dealers; using uniform contracts in the sale of coal to large consumers containing a clause restricting the use of such coal to some particular plant and prohibiting its diversion to other purposes; agreeing at formal meetings to a uniform method of receiving payment for coal shipments, and various other methods. It also was found that respondents determined prices without making due allowance for difference in the cost of selling or transportation, but for the purpose of driving Illinois and other all-rail coal and the distributors thereof from the Twin City market, and to retain such market for the respondents.

The respondent companies named are: Pittsburgh Coal Co. of Wisconsin, Minneapolis, Minn.; Northwestern Fuel Co., St. Paul, Minn.; C. Reiss Coal Co., Sheboygan, Wis.; Clarkson Coal & Dock Co., St. Paul, Minn.; M. A. Hanna Coal & Dock Co., Cleveland, Ohio; Carnegie Dock & Fuel Co., Pittsburgh, Pa.; Berwind Fuel Co., Chicago, Ill.; Northern Coal & Dock Co., St. Paul, Minn.; Great Lakes Coal & Dock Co., Minneapolis, Minn.; Pittsburgh & Ashland Coal & Dock Co., Cleveland, Ohio.

In connection with this order attention is called to the fact that the Federal Trade Commission frequently issues orders which reflect on industry in a manner regarded by many as being entirely unjustified. So to allow no loophole the commission prohibits many things which the respondents may not have done or long since may have ceased to do. The probabilities are that the reply of the dock operators association will take away much of the implied anathema of this order.

Western Pennsylvania and Ohio Operators Confer on Scale Again at Cleveland

Ohio and western Pennsylvania operators went into conference in Cleveland March 27 in a third attempt to find relief from the situation brought about by the Jacksonville agreement.

The news that a conference of Pennsylvania and Ohio operators had been quietly called and was under way in Cleveland became known when William G. Warden, chairman of the board of directors of the Pittsburgh Coal Co., admitted over long distance telephone at 12.30 p.m., Friday, that he was then in the conference room.

The first and second attempts at a conference, understood to aim at negotiations with the United Mine workers for abrogation of the Jacksonville wage agreement, resulted in postponements.

The latest conference is understood to be an attempt on the part of Pennsylvania and Ohio to get action for themselves.

Mr. Warden spoke as if he expected that Indiana and Illinois might yet put in an appearance. The Pittsburgh operator declared that he did not know how long the conference would last.

The root of the matter is the effort by operators of the Central Competitive Field, comprising western Pennsylvania, Illinois, Indiana and Ohio, to overcome the handicap which has forced them to close a majority of their mines.

Canada to Increase Tax On U. S. Coal

Tariff changes proposed in the Dominion Parliament will affect principally bituminous coal. Slack coal imported from the United States was made dutiable at 50c. a ton, instead of 14c. as at present. Bituminous coal and coal "not otherwise provided for" will stand at the present duty per ton, British preference 35c., intermediate 45c., but general, formerly 50c., was advanced to 53c. The increased revenue on slack coal from the United States, as provided in the new Canadian budget, is "the most important announcement regarding the coal trade of Nova Scotia since the Fielding Tariff of 1907," Premier Armstrong of Nova Scotia believes. "It should give an impetus to the coal trade of the province and should materially assist in marketing from 300,000 to 400,000 tons in the St. Lawrence market," he said. "The direct effect should be to enable Nova Scotia operators competing in the St. Lawrence market to effect a saving of 36c. per ton in the selling price of their product."

Wage Cutting in Colorado Spreads Over State

More of the Colorado coal mining companies have fallen in line with the wage-reducing movement, so that it is felt that before many weeks every company in the state will have filed notice of reduction with the State Industrial Commission. The only "blue note" in the whole harmony of lower wages is that sounded by sixty miners of the Colorado Fuel & Iron Co. in Walsenburg who filed an objection to the 20 per cent cut requested by the men of the company in that territory and granted by the company. The state commission has not acted on the protest. The wage reductions in the various companies all approximate 20 per cent, thus placing the wage level almost at that of 1917. The new wages take effect April 16 and 17.

As a result of the wage scale reduction in the Walsenburg, Canon City domestic coal was reduced March 20 from $5.25 to $4.25 on commercial lump and nut was reduced from $4.75 to $4. Pea dropped from $3.50 to $3; Crested Butte district high-grade anthracite (Elk Mountain) No. 1 and 2 furnace size from $7 to $6.25, and Nos. 3 and 5 base-burner size from $7.50 to $6.50.

Strike Called in Attempt to Unionize West Virginia

In an attempt to unionize the non-union fields of northern West Virginia, the United Mine Workers has issued an official strike call for April 1. The fact that the strike had been called was revealed March 27 by William J. Patton, vice-president of District No. 5, United Mine Workers (Pittsburgh).

The strike will extend through ten counties in Northern West Virginia, including Grafton, Clarksburg, Fairmont and Morgantown.

Mr. Patton displayed a page advertisement published in West Virginia newspapers in which the strike was called. It was signed by Van Bittner, national organizer. Philip Murray, international vice-president, also is in the field, according to Mr. Patton.

The strike may result in a three-cornered fight, according to advices from West Virginia, due to the existence of the new Mine Workers' Association of West Virginia, of which Thomas Cairns is the head.

It was reported that the United Mine Workers would bring eighteen organizers into the Fairmont region including besides International Vice-President Philip Murray, International Board Members John O'Leary, of Pittsburgh; A. R. Watkins, of Yorkville, Ohio; W. D. Van Horn, of Terre Haute, Ind.; International Board Member David Watkins, of Iowa, and Andrew Steele, of Missouri.

An intensive organization campaign has been planned, with mass meetings in Clarksburg and Morgantown on Wednesday, to be addressed by William Green, president of the American Federation of Labor. Van Bittner has issued a "strike call" to the non-union miners to join with the union men Wednesday.

The strike is regarded as the last stand of the union in northern West Virginia. In statements and letters sent by the union officials this week to various locals, the men were warned to observe the law and not to resort to violence. State officials are prepared for any emergency.

Co-operative Violators of Wage Pact Face Expulsion

The officials of district No. 11, United Mine Workers, played their trump card March 24, in the controversy over co-operative mining when they notified the local unions of the Indiana field that any member who affiliated himself in the future with a co-operative mining venture, in violation of the prevailing agreement, would be dropped from membership in the organization.

This action is the result of a meeting called by International President John L. Lewis, and held in Indianapolis last week, at which a thorough investigation of co-operative ventures was made. The meeting was attended by the district executive board and a committee from each local union which at the present time is involved in co-operative mining.

The circular mailed to each local union in the district does not state what action will be taken in regard to the miners engaged in co-operative mining but the officials of the district stated "these cases were taken up individually and acted upon."

James Sherwood

Back in his old post as State Mine Inspector in Kansas, having been appointed March 25 to succeed Leon Besson, who displaced him in that office a year ago.

Commerce Commission Files Defense of Private-Car Ban

In an answer filed March 27 in the U. S. District Court in Philadelphia to suits by nearly 100 railroads, coal and coke, steel and other industrial corporations for injunctions the Interstate Commerce Commission defends its order limiting the use of privately owned coal cars for the transportation of bituminous coal as fully justified by evidence it heard.

The railroads and other plaintiffs maintained that their businesses would be hampered by what they termed was an arbitrary, illegal and unjustified ban on the use of private coal cars, adding that if the order were to stand it would put out of use 30,000 coal cars in which upward of $60,000,000 had been invested.

In defense of its order the commission in its answer contends that the facts and evidence presented to it disclosed that the railroads and other owners of private cars were being accorded greater advantages by coal producers than the corporations and firms without these private conveyances and that the order was made to prevent non-owners from being discriminated against.

New York Anthracite Prices April 1, 1925

(Per Gross Ton, f. o. b. Mine)

	Broken	Egg	Stove	Chest-Nut	Pea
Lehigh Valley Coal Sales Co.	$8.00	$8.30	$8.75	$8.50	$5.25
Lehigh Coal & Nav. Co.	8.50	8.50	8.90	8.40	5.25
Phila. & Reading	8.45	8.45	8.85	8.45	5.30
Lehigh & Wilkes-Barre Coal Co.	8.00	8.25	8.75	8.25	5.00
Hudson Coal Co.	8.25	8.25	8.75	8.25	5.50
D., L. & W. Coal Co.	8.00	8.25	8.50	8.25	5.25
M. A. Hanna & Co.	8.50	8.50	8.90	8.50	5.25

Steam sizes: No. 1 buckwheat, $2.50@$3; rice, $2 barley, $1.50.

Sherwood Displaces Besson As Kansas Mine Chief

One of the first acts of the labor commissioner of the recently constituted Public Service Commission in Kansas was to appoint a new state mine inspector. Frank O'Brien, labor commissioner, announced March 25, that James Sherwood, of Pittsburg, who was superseded as inspector by Leon Besson, an appointee of Ex-Governor Davis, in March, 1924, would, in turn, succeed Besson to that office.

Sherwood had served five years as inspector when he was displaced by Besson. His appointment dated from June, 1920. Since his retirement from the office last March he has been representing the Associated Companies, a mine liability organization.

Considerable criticism, among both politicians and miners, was occasioned by Governor Davis' appointment of Besson. Later Besson was suspended by the Industrial Court, whose duties since have been assumed by the Public Service Commission for failure to take an examination before his appointment. Ernest Shaw, of Weir, a deputy inspector, filled in the interval of several weeks before Besson qualified.

Shaw was one of the deputy inspectors whose reappointment was announced at the same time as Sherwood's appointment. Other deputies to be reappointed are: William Glennon and Frank McGavron, of Pittsburg. All served under Sherwood when he held the office before, as also did William Hislop, of Arma, who has been appointed superintendent of the mine-rescue station at Arma.

Kansas Output Below Estimate

Coal output in Kansas in 1924 totaled 4,491,069 tons compared with 4,650,479 tons in 1923, according to the official report of Leon Besson, state mine inspector, completed March 19. The total proved considerably smaller than an estimate based on incomplete reports immediately after the close of last year.

Most of the mines showed a gain over 1923 and the loss of 159,410 tons is attributed to mines 49 and 50 of the Central Coal & Coke Co., No. 16 of the Jackson-Walker Coal & Mining Co. not working and the mines of the Sheridan Coal Co. operating at much less than usual capacity.

The seven fatal accidents during the year make a production of 641,581 for each such accident, almost double the tonnage per fatal accident for any year since 1884, when the state began keeping records.

Of the 4,491,069 tons produced last year 1,424,536 was lump, 1,408,583 nut or slack and 1,657,950 mine run. The tonnage was divided as follows: Deep mines, 3,740,395; strip mines, 750,674. A large part of the strip-mine production of the Pittsburgh district is just across the state line in Missouri and so does not appear in the Kansas report.

Kansas miners worked an average of 120 days during the year as compared with 118 in 1923. A total of 9,743 men were employed, 6,891 of whom were underground miners, 1,605 underground day men and 1,247 day top men.

Illinois Commission of Miners and Operators Confer on Conveyor Scale

A commission of coal operators and miners' officials began a conference at Springfield, Ill., Saturday, March 28, to attempt to reach an agreement on a new wage scale to be paid workers in the first all-conveyor mine in the Middle West and two other Illinois mines which have installed conveyors. This commission is composed of President Rice Miller, of the Illinois Operators' Association, and William Hutton, of Springfield, for the operators, and Vice-President Harry Fishwick, Springfield, and Board Member Joseph Hartley, of Duquoin, for the Illinois Mine workers.

"Installation of conveyors," Mr. Fishwick said, "will work a decided revolution in coal mining. I am not sold on it, but the boys at Nason are strong for it. They are paying the miners a day rate of $8.04 for loading and mining, and $8.54 for machine mining. But our members want a tonnage rate.

"The mine at Nason is by far the biggest mine in the Middle West that has installed conveyors, but the Spring Valley (Ill.) mine had them seven months ago, and the Mureen mine of the Southern Coal & Coke Co. also has had them. I have been down at Nason inspecting their system.

"One conveyor takes the coal of thirty loaders. There are six auxiliary conveyors to each conveyor. Five men load into one auxiliary, which carries the coal to the conveyor, which empties into a car of three tons' capacity. It takes about two minutes to fill the car. At present there is no system for cleaning the impurities from the coal, but a man to pick out the impurities might very well be stationed along its side. The conveyor moves the coal slowly.

Companies Want Day Rate

"There are a number of things to consider in arriving at a wage scale for conveyor loading. The companies want to keep a day rate.

"In our deliberations we intend to adhere to our agreement, which provides that 'the right of the operator to introduce and operate any such new device or machinery shall not be questioned, and his selection of such men as he may desire to conduct tests with or operate such device or machinery shall not be in any way interfered with or obstructed by the miners of their representatives, provided the wages offered are at least equal to the established scale rates for similar labor'."

It was the opinion of Vice-President Fishwick that conveyor loading has come to stay. He believes it has passed the experimental stage.

The Buffalo, Rochester & Pittsburgh Railway Co. will receive bids for all or a portion of its requirements of bituminous coal for locomotive fuel, which, it is estimated, will approximate 700,000 tons during the fiscal year, May 1, 1925, to April 30, 1926, in accordance with specifications which will be supplied upon personal or written application. Bids must be submitted by 12 o'clock noon, April 6, to D. S. Jones, assistant to the president, Room 400, 155 Main Street West, Rochester, N. Y.

Fords Support the Burlington

This empty rolled off the "high line" at New Orient under the force of the cyclone and lit on a convenient row of miners' automobiles. The other cars to be seen on top of the grade are all overturned and stripped of their trucks.

More Wage Cuts and Closings In Central Pennsylvania

Dissatisfaction with the Jacksonville scale in central Pennsylvania, not only among the operators but among the miners, continues to grow. On March 25 the miners at Morrisdale, in the Clearfield region, requested the Morrisdale and Cunard Coal companies to make a new wage agreement with them and, as a result of conferences, an agreement was reached on the basis of the 1917 scale. Operations have been resumed on that basis. The number of men employed about Morrisdale approximates 700. The Shawmut Mining Co. has leased Shawmut Mine No. 2 and operations have been resumed under the 1917 scale. This is the second of that company's mines to be put into operation.

The Allegheny River Mining Co., the largest around Kittanning, on the Pittsburgh & Shawmut R.R., having mines at Kittanning, Cadogan, Seminole, Chickasaw, Mohawk and Conifer, closed on April 1, announcing that it could not operate until wages were readjusted.

About a dozen of the largest mines in Cambria County which have been working steadily and others from three to six days a week, closed on April 1 for an indefinite period. These mines were either working under annual contracts or at a loss, and it has been found impossible for them to continue under present conditions. Approximately 5,000 men are affected.

The Broad Top fields, long in the dumps, have about petered out. During the war a bonus of 10c. a ton above the union scale was imposed, with the understanding that it would be dropped at the expiration of the agreement. The United Mine Workers, however, imposed the bonus of 10c. a ton onto the Jacksonville scale, and this is still maintained by the union, with the result that these mines are all idle. All operators in central Pennsylvania agree that the present scale is so much out of line with market conditions that all the union sections of the field must stay closed until a readjustment is effected.

Nova Scotia Miners Agree to Return at Old Scale

Striking miners in Cape Breton, N. S., through District 26 officials of the United Mine Workers replied seriatim March 21 to a definite proposal for the resumption of work which they state was handed them on March 19 by the Deputy Minister of Mines, T. J. Brown, in an endeavor to find a basis for the reopening of negotiations between the British Empire Steel Corporation and its coal miners, temporarily abandoned with the complete tie-up three weeks ago.

In effect, the miners accept the proposals of the government, involving the return to work on the 1924 wage scale and the appointment of a commission to investigate conditions, under the Public Inquiry Act, with reservations, insisting upon immediate steps on the part of the government for the relief of destitution, now at an acute stage throughout the coal fields, despite the generous response to public appeals for help, and a guaranteed minimum work of four days a week.

Vice-president J. E. McLurg of the British Empire Steel Corporation has issued an exhaustive statement defining the position of the company as regards the Nova Scotia miners' strike, the main points of which are as follows:

"The corporation will not enter into negotiations for the purpose of effecting a settlement of the present dispute until the maintenance men are back at work and in the employ of the various companies. After the men have returned to work and negotiations are resumed it is only fair that the miners should know there is no possibility of the corporation resuming negotiations for a new contract on the 1924 scale."

An official statement of the British Empire Steel Corporation in reference to a report that the company had lost practically all contracts for the St. Lawrence market this year is as follows: "Undoubtedly the delay in agreeing to a wage scale is going to lose considerable coal contracts that otherwise would have been filled in Nova Scotia. If many more contracts were lost it may be necessary to close a few mines permanently."

Deadlock on Jacksonville Wage Pact Justifies Economics Bureau Provision Of Oddie Coal Bill, Senator Believes

By Paul Wooton
Washington Correspondent of *Coal Age*

In the present deadlock over the Jacksonville agreement Senator Oddie sees vindication for one of the provisions of his Bureau of Coal Economics bill. Were the advisory committees therein provided functioning at this time there would be neutral ground for the discussion of the difficulties in which the industry finds itself. Both mine workers and operators hesitate to initiate a proposal for fear it would be interpreted as a sign of weakness.

Were the advisory committees meeting every month, Senator Oddie believes, they long since would have taken cognizance of such significant facts as closing mines, shifting markets, bankrupt companies and idle workmen. The probabilities are that means would have been found for remedying conditions before they had grown acute.

There is considerable evidence that the industry in its present dilemma is beginning to see some things in his bill worth considering. Then too he has a very favorable report on it from Prof. John E. Orchard, of Columbia University.

The economists of Harvard University publish the *Quarterly Journal of Economics*, devoted largely to advanced academic thought on such matters. Senator Oddie recently read an article written by Professor Orchard on the bituminous coal industry which appeared in that journal. Professor Orchard proposes the creation of a Coal Parliament consisting of operators, mine workers and a minority composed of representatives of consumers. Since the objective of the plan was much the same as that of the legislation he had introduced and had some points of similarity in the means of accomplishing that end, Senator Oddie asked Professor Orchard to analyze his bill. The following are extracts from Professor Orchard's reply:

Bill Protects Public Interest

"I consider the plan as outlined in your bill as distinctly in the public interest. Its provisions, if put into effect, should lead to decided improvements in the coal industry.

"There is no fundamental conflict between the plan outlined in your bill and that proposed in my recent article in the *Quarterly Journal of Economics*, though they do differ in certain respects. As I understand it, your bill provides in the Bureau of Coal Economics the machinery for the thorough investigation of the problems of the coal industry. My plan provides for such machinery in the Coal Institute to be created by the parliament. I am sure that the work of investigation could be carried on equally effectively either by a government bureau or by an institute created and supported by the coal industry.

"It can be said in favor of the government bureau that there would be no question of the fairness or impartiality of its findings.

"A difference does appear in the provisions made for putting into effect policies that may be determined as the result of investigation. As I understand your bill, such policies may be brought to the attention of the coal industry, to be accepted or rejected by those at present in control of the industry, or such policies may be brought to the attention of Congress for legislative action. Only in case of an emergency is there any provision for the control of the industry.

"It is my belief that organization of the industry is essential if any improvement in the present unsatisfactory conditions is to be realized. I suggest that the organization should take the form of a commission or parliament composed of representatives of the operators, miners, consumers and distributors and that policies determined by the investigating body should be put into force by that parliament.

Calls Fact Finding Essential

"To summarize our positions, you propose that fact-finding machinery shall be created within the government and that the actual application of policies deemed desirable shall be left to the industry as at present organized or to congressional action. I believe that fact-finding is highly essential and that policies to improve the industry can be successfully applied only through a comprehensive and representative organization. Both the fact-finding and the organization I leave to the industry itself and the fact-finding body is made an agency subordinate to the parliament. I believe that your bill is excellent as far as it goes, but that there should be some machinery provided for the actual control and regulation of the industry. Recommendations by a fact-finding body without any machinery for putting the recommendations into force would be, I am afraid, rather futile.

"My insistence that the regulation of the industry shall be exercised by the industry and not by an outside agency is based not on the usual fear of government interference in business but upon a conviction that in so far as possible business and all other enterprises and interests should solve their own problems without looking to the government for assistance or for regulation. If they should fail in their efforts government interference is then warranted.

"I have only one or two more specific comments to make on the bill. Two of its provisions seem to me to be particularly fortunate. First, you have provided in your Bureau of Coal Economics for the centralization of the collection of all information regarding the coal industry in one government agency. The present arrangement of collection by several bureaus and departments must lead inevitably to duplication and must place a rather irksome burden on the industry in answering inquiries.

"Secondly, I believe that the advisory committees provided for in section 211 may have far-reaching influences on the improvement of the industry. They will function, as the bill intends, in limiting the activities of the Bureau of Coal Economics to matters of interest in the different groups in the industry. In addition, they will bring together into a working organization the opposing elements of the coal industry and should demonstrate to those interests the mutual benefits of co-operation.

"I would suggest that representatives of coal distributors—the wholesalers and retailers—also should be included on the advisory committees. They are important parts of the industry and many problems can be studied and solved only through them."

The Coal Parliament is to be entirely of the industry's own creating. It would not be a government affair nor would the government participate in its operations. The parliament would create a Coal Institute which would collect statistics and other data and be a center of all information as to the industry.

Professor Orchard spent a considerable period in Germany making an inspection on the ground of the German coal syndicates. Germany since the war, facing constantly a shortage of coal, wildly fluctuating prices in addition to labor troubles, has gone a step further than the old coal syndicates of the pre-war days. The industry there now is organized into a National Coal Council, to which the various parties at interest elect members. The National Coal Council determines wages and working conditions. It sets up priorities in distribution and fixes prices.

Some American operators would jump at the chance to agree on prices even at the cost of consulting the United Mine Workers and some consumers in the process, but they would wonder how such a coveted end could be brought about.

It would seem that parliamentary and other practical difficulties would be encountered in a parliament made up of representatives of union and non-union operators, of the United Mine Workers, of the wholesalers and of consumers.

River Coal to Twin Cities

A. L. Crocker, of Minneapolis, Minn., who has been urging river traffic for many years, is in communication with West Virginia coal operators, who contemplate a fleet of light-draft barges to operate from their mines via the Ohio and Mississippi rivers to the Twin Cities. According to the correspondence, those interested are acquiring coal lands on the water, to avoid any rail haul and propose to move their coal in light barges that can be hauled out of water in the Northwest and dumped without heavy expense for unloading.

New England Dealers See Menace to Anthracite in Wider Use of Soft Coal

Dark days are ahead of the anthracite industry unless a new spirit of cooperation is developed, declared W. A. Clark, president, New England Coal Dealers' Association, in opening the 23rd annual convention of the retail organization at the Municipal Auditorium, Springfield, Mass., March 25. "There is just one thing, in my opinion, that will save this great business from disaster: that is absolute unanimity of action by all concerned—unions, mining companies, wholesalers, jobbers, retailers."

If the union insists upon more pay and less work in the hard-coal regions employment will become intermittent and earnings decrease. The use of substitutes will be encouraged. These substitutes, in the order of their importance, were listed by the speaker as bituminous coal, coke, fuel oil, gas and electricity, with bituminous coal and its products—coke, gas and electricity—more menacing than fuel oil.

"Anthracite," continued Mr. Clark, "is our real business, and we should exert every energy to promote the continued use of this coal against all competitors." There is, he went on, a faint hope that buckwheat may be made a domestic size, but "the marketing of anthracite, be it buckwheat or any other size, must be studied. If we were to criticize the producers, we would do it on the ground of their merchandising methods. We retail merchants have become coal-service men during the past few years, and we must of necessity study service-to-the-consumer methods of other industries."

To err is human, "but it does seem odd," observed Mr. Clark ironically, "that all the errors committed in connection with the anthracite industry are committed by the retailers."

Henry C. Chappell, F. A. & A. H. Chappell Co., New London, Conn., addressing the convention on "Service to the Consumer," urged, among other things, that the retailers take on combustion devices as side lines and related some of the successes his company had had with the sale of such equipment. J. V. Lamberton, Hartford, Conn., closed the afternoon session with a talk on "Advertising for the Retail Coal Merchant." In the evening the organization held its annual dinner and dance at the Hotel Kimball. About 500 attended.

The election of officers for the new association year was the first order of business on March 26. The report of the nominating committee recommending the re-election of the present incumbents was adopted without dissent. The officers for 1925-26 are: William A. Clark, president; G. A. Sheldon, treasurer; C. H. Elder, secretary; J. C. Miller (Maine), E. A. Wilson (Massachusetts), H. A. Osgood (New Hampshire), G. L. Miner (Rhode Island), N. E. Pierce (Vermont) and J. B. Gregory, Jr. (Connecticut), vice-presidents. G. U. Kierstead, M. P. Moore and J. F. Higgins were re-elected members of the executive committee, with C. C. Young, R. S. Hayes and H. C. Edwards as holdovers. E. I. Clark is executive secretary.

The delegates present displayed considerable interest in the new sizing standards adopted by the leading producers. A number of questions on this subject were asked from the floor of the convention hall and the subject was referred to also in remarks by H. A. Smith, vice-president, D. L. & W. Coal Co., and E. W. Parker, director, Anthracite Bureau of Information.

Mr. Parker's remarks were devoted largely to comparisons between production figures of 1890 and 1923 to show the decrease in the percentage of the larger sizes—i.e., broken and lump—shipped and the great increase in the percentage of buckwheat and smaller sizes. During the course of an open discussion on direct shipments, Mr. Parker declared that the producers would ship direct to the consumer whenever the retail dealer refused to interest himself in the business. Mr. Clark retorted that the operators could not expect the retailers to get behind a buckwheat selling campaign when the producer sold coal to large private consumers at the same price they asked of the retailer.

D. F. Williams, vice-president, Hudson Coal Co., was the last speaker of the convention. His address was a reply to a recent statement of the Massachusetts Commission on the Necessaries of Life that by using bituminous coal the domestic fuel bill of the commonwealth could be reduced $45,000,000. Mr. Williams pointed out that Massachusetts' per capita consumption was less than in certain neighboring states. He made the point that the statement of the commission gave no weight to the damage to health, clothing and property through smoke when bituminous coal is used. If such damage were considered, he argued, the alleged savings vanish.

Early Bird Gets the Lease

They don't often bid against one another for coal-land leases in Colorado—in fact only two cases are on record—but when Charles W. Rinehart on March 9 went after 86 acres of land leases near Cedaredge, Colo., at the Montrose land office, he made sure he was there in time. He arrived at 8:30 a.m. and parked there until 3 p.m., when the bidding started. Then he outbid Carter & Wiley, who had filed on the land, and finally got the lease for $1,125. The sale had started with a bid of $25. Mr. Rinehart was on time because he had heard the story of the only other case on record. On that occasion the man who wanted to outbid the people who had originally filed on the land arrived at the land office half an hour early. He dallied downstairs until his watch said the sale was due. Then he went upstairs and found his competitors had just bought the lease. His watch was five minutes slow.

Merger of Kansas Strippings Nearly Completed

Strip-pit coal mines in Crawford and Cherokee counties, Kansas, and in Barton County, Missouri, are to be consolidated under the control of one large operating company, if a move now well under way is carried to a successful conclusion. A group of New York financiers is optioning the properties preparatory to the consolidation. Ira Clemens, president of the Clemens Coal Co., is acting for them in obtaining the options.

The obtaining of options has been under way since the first of the year and organization of the company will immediately follow completion of this part of the project, which was recently forecast for April 1 by Mr. Clemens.

Among the steam-shovel properties on which Mr. Clemens has obtained options are those of the Crowe Coal Co., Pittsburgh & Midway Coal & Mining Co. and the United States Coal Co.

The Crawford and Cherokee county shovel mines last year produced 748,774 tons of coal, while the entire tonnage for these counties, including the deep mines, was 4,001,038 tons. The estimated shovel production for Barton County was 350,000 tons.

Mr. Clemens, who is a director of the National Coal Association, has been in Washington, D. C., attending the directors' meeting of that organization, and more definite announcement of the progress of the plans for the projected consolidation was expected on his return to his office in Pittsburg, Kan.

Big Utah Company Mines Leased to Employees

The efforts of outlying coal fields to get relief somehow from the onerous conditions of today is leading to the adoption of various policies. Colorado, unhampered by the Jacksonville agreement, is cutting wages fast and furiously. Now Utah comes to the front with a scheme of leasing big-company mines to individuals. The Utah Fuel Co. has already leased its Clear Creek and Winter Quarters groups of mines. The Clear Creek mines go to William Littlejohn, former general superintendent at Castlegate, and his brother J. W. Littlejohn. The Winter Quarters properties went into the hands of T. J. Parmley, who has been with the company for two years at Winter Quarters, and to Emil Ostlund, who was at Utah Mine until it shut down recently. This arrangement took effect April 1.

This policy of leasing to employees who resign to accept the leases is the alternative of shutting the properties down. Before the Winter Quarters and Clear Creek mines were leased an order had come from the New York headquarters of the interests in control of the Utah Fuel Co. directing that the mines be closed at once. Changes in wages or working conditions have not been announced.

The Castlegate and Sunnyside groups of Utah Fuel Co. properties remain directly in the company's control. No general superintendent will be named to succeed Mr. Littlejohn, it is said.

Coal Merchants and Operators Pleased With New Anthracite Standards

That the new standards of preparation would give the anthracite retailer a greater assurance in doing business and greater ability to meet the competition from other fuels was the belief of both Samuel B. Crowell, president of the National Retail Coal Merchants' Association, and Samuel D. Warriner, president of the Lehigh Coal & Navigation Co. and chairman of the Anthracite Operators' Conference, as expressed at the Seventh Annual Sectional Meeting of the New York Group of the New York State Coal Merchants' Association, held at the Hotel Pennsylvania Thursday, March 26.

The speakers at the luncheon were Rudolph Reimer, of the Commonwealth Fuel Co.; Mr. Crowell and Major E. J. Rice. Mr. Crowell heralded the new standards as a great achievement for the Anthracite Trade Relations Committee. He believed it was only a first step. He said also that it was the first time the trade had been favored by standards, but Mr. Warriner declared at a later meeting that so long as the 65-per cent contracts stood the fuel was effectively standardized. When the law wiped out the contracts the ability to require uniform sizing was removed.

Must Have Standards

S. D. Warriner said the advantages of a standard were so manifest that it was academic to state them. Since the government interference during the war the industry had slipped and till it recently made provision for new standards it had none that were universal enough to afford the retailer security. These standards may be revised later if need shows they are not for the best. The industry would make itself over if it could, but, unfortunately, the jealousy of governmental bodies made interference with any such reform only too probable.

The new standards vary little, he said, from those in use. The pea size, however, is restricted in quantity. In fact there is a desire to cease the production of that size, and in time that may be done. The industry is changing rapidly, but we can't recognize it, so silently does scientific development operate to modify conditions. Twenty years ago the Coxe stoker was a crude device. It took years to develop it. Now it takes care of all the buckwheat No. 2. It lightens the problems of the industry in that direction. As the market changes the industry must align itself to meet it. Mr. Warriner said he would like producers and distributors to police the industry, and perhaps, if the law allowed, it might be possible to have a trademark so that the retailer might be able to declare that he handles only certified coal.

Roderick Stephens, vice-president, Stephens Fuel Co., New York, discussed the cost of degradation and pointed out ways by which the retailer may reduce this loss. He cited analysis of actual loss due to degradation as experienced by several retailers handling waterborne coal in the New York metropolitan district which showed an excessive cost due to loss of weight and loss due to breakage. Checking up tare weight of cars carrying coal and resuming the practice of reweighing at tidewater loading piers, Mr. Stephens asserted, would reduce the first loss. The breakage loss due to handling and necessary rescreening by the retailer will be decreased as a result of the adoption of the operators' new standards of sizing and preparation.

Fuel oil as a competitor of King Coal was the subject of a paper presented by William F. May, supervising engineer of the newly formed Anthracite Service. He denied that because coal had suffered in the marine field from the competition of oil, was any reason why oil should be favored on land. He clearly demonstrated that marine conditions are peculiar. Marine boilers are suited for installing oil-burning equipment and with the higher ratings that oil permits, the speed of the vessel can be increased. The number of stokers, who are of a particularly low class, is greatly reduced, and, in the case of smaller ships, less room is required for storing fuel. But on land fuel oil has been less successful.

Mr. May pointed out the failure of oil as a fuel at Columbia University after a year's trial and under the best conditions. Power-plant boilers, the speaker said, were not suited for oil burning, and although short tests revealed savings and influenced plant owners to install oil-burning equipment, after a length of time boilers had to be repaired or new ones put in, costly instruments had to be purchased and many plants spent considerably more money for a supposedly better system. "If part of the money," Mr. May said, "spent in the search for efficiency through liquid fuel had been spent on modernizing their coal-burning and combustion equipment to burn one of the smaller anthracite sizes, the results they were seeking would have been obtained." The Western Electric Co.'s central power station at Kearny, N. J., after a thorough study of what fuel should be burned decided in favor of one of the smaller sizes of anthracite on an approved stoker. As for domestic oil burners, the speaker classed them as distinctly an expensive luxury and far from being practical. Mr. May asked for the co-operation of the retail coal man with the efficient combustion engineering service which the anthracite operators have placed at the disposal of the retailer and the consumer.

J. H. Tregoe, of the National Association of Credit Men, told his audience that, although 95 per cent of business is on credit, the merchant understands credit control less than all his other problems. Of the $700,000,000 loss in credits to business in 1924, Mr. Tregoe stated that 35 per cent of this amount was tainted with fraud.

Protecting the public against short weights, and the honest dealer against unfair competition, was the subject discussed by Joseph J. Howell, Commissioner of the Bureau of Weights and Measures of New York City. "Coal," said Mr. Howell, "is the cleanest commodity handled in New York City."

Thomas F. Farrell, vice-president, Burns Bros., New York City, expressed the opinion that a retail coal salesman should not be a combustion engineer.

U. S. Senator William H. King, from Utah, the principal speaker at the banquet in the evening, told the coal men that he was not so sure of the success of the proposed railroad consolidation and advised them to look into the matter as it might be of much importance to the coal industry.

Nelson Harding, cartoonist of the *Brooklyn Daily Eagle*, was the other speaker. Roderick Stephens was the toastmaster. About 400 were present.

Woman Drives Rescue Truck

In the absence of Leon Besson, state mine inspector, from Pittsburg (Kan.) headquarters his wife drove a rescue truck to the Wilbert & Shreeb mine, four miles west of Pittsburg, on March 9, when a call was received following an explosion. On the way to the mine the truck overturned and Mrs. Besson suffered a fractured collarbone. George Yankoviz, a shot firer, was killed by the explosion, but Harry Manion, another firer, was rescued.

New Orient Office Building Stood Firm

This brick, steel and concrete structure merely lost all its doors and windows. The flagpole on top held its ground although a flag which had depended from it, departed for Indiana and points east along with all the loose papers from the office desks.

For Smokeless Fields of West Virginia 1924 Was Banner Production Year

Tonnage of All Kinds of Coal on Chesapeake & Ohio Increased 30.2 per Cent Over Preceding Year—Quantity of Captive Coal Decreased 25 per Cent

Last year, though not a period of large profits for the smokeless fields of West Virginia, was one of unprecedented production. Says the Winding Gulf Operators Association:

"No longer can we refer to 1916 as the year of high-peak tonnage in the four smokeless districts of West Virginia. The year 1924 has come and gone and has forged ahead in tonnage production over any that preceded it. Until last year the 36 million tons mined in the year 1916 has stood as the tonnage record of the smokeless coal fields of West Virginia, but in 1924, 38½ million tons was mined and shipped, thus setting up a new record.

"All the districts participated in increased tonnage in 1924 over 1923: Pocahontas, 700,000; Tug River, 800,000; Winding Gulf, 900,000, and New River, 400,000. Thus in every district except in the Pocahontas, 1924 will stand as the biggest production year.

"It will be noted that in 1924 there was a decrease in 'captive coal,' largely due to the decrease in the production of the United States Coal & Coke Co. During the year past, therefore, the commercial tonnage of smokeless coals was augumented to that extent.

"The U. S. Government no longer demands the same tonnage of smokeless coals that it once did. In previous years this tonnage ran well around one and one-half million tons per year. Now it is less than one million.

"As usual, the bulk of the tonnage comes from the Norfolk & Western territory, the Pocahontas and Tug River fields shipping over half of the tonnage produced.

"The year 1924 registers a high tonnage for the Chesapeake & Ohio and Norfolk & Western railroads; the former hauled 43 million tons, an increase of 10 million tons over 1923, and the latter road, 33 million tons, an increase of 3 million tons over the previous year. The Virginian Ry. in 1924 ran 400,000 tons less. This is due to the falling off of tidewater demands for coal in 1924 as compared with 1923, the Virginian not being able to recoup by moving tonnage West, having no Western connection.

"After surveying the effort in 1924, one might well ask if it was worth while. We have taken from our properties that which we can never replace. Many of us have not been able to keep our equipment up to standard because of lack of profits, and today some properties are not as well equipped as they were a year ago. Taken as a whole, the tonnage shipped has netted nothing in the way of a return on the investment and in many individual cases there has been a distinct loss."

Tonnage Hauled on Chesapeake & Ohio R.R.

(In Net Tons)

	1924	1923	1922	1921	1920
Logan District	16,659,455	11,654,921	12,274,810	10,551,200	
New River District... 7,468,170	9,851,800	8,327,715	6,266,985	5,601,610	
Winding Gulf Dist.... 2,383,630					
Kanawha District	5,856,270	5,189,090	1,919,400	3,749,250	
Coal River District	3,478,290	3,042,755	1,393,930	1,962,300	
Kentucky District	5,170,141	4,329,660	3,842,030	1,900,000	
Long Fork District	1,329,490	160,805			
Miller Creek District	486,740	212,060			
A. C. & I. Ry.	81,650				
Totals	42,913,836	32,917,006	25,697,155	23,764,360	27,187,950

Tonnage Hauled on Virginian Railroad

(In Net Tons)

	1924	1923	1922	1921	1920
Winding Gulf District	5,479,034	5,407,956	5,276,600	4,551,639	
New River District	1,190,986	1,481,933	1,097,469	1,110,260	
High Volatile District	764,220	930,325	618,148	401,821	
Pocahontas District	765	63,067	27,987	12,646	
			588		
Totals	7,435,005	7,896,281	7,020,792	6,076,366	7,612,309

Tonnage of All Coal Carried by Railroads of Southern West Virginia

(In Net Tons)

	1924	1923	1922	1921	1920
N. & W.	33,435,165	30,876,285	30,798,275	23,444,374	25,314,585
C. & O.	42,913,836	32,917,006	25,697,155	23,764,360	27,187,950
Virginian	7,435,005	7,896,281	7,020,792	6,076,366	7,612,309
Totals	83,784,006	71,698,572	63,516,222	53,285,100	60,114,844

Production, Smokeless Fields of West Virginia

(In Net Tons)

District and Railroad	1924	1923	1922	1921	1920
Pocahontas					
N. & W. 16,866,150	16,866,915	16,168,892	16,703,967	13,364,946	15,421,288
Virginian 765					
Winding Gulf					
Virginian 5,479,034	7,862,664	6,958,176	7,015,615	5,793,789	5,813,950
C. & O. 2,383,630					
New River					
C. & O. 7,468,170	8,659,096	8,259,488	5,625,439	5,469,720	7,065,225
Virginian 1,190,926					
Tug River					
N. & W.	5,117,790	4,391,545	4,423,745	4,090,600	4,073,665
Totals	38,506,465	35,778,101	33,768,766	28,719,055	32,374,128

Smokeless Coals Carried by West Virginia Railroads

(In Net Tons)

	1924	1923	1922	1921
Norfolk and Western	21,983,940	20,497,370	21,099,725	17,442,900
Virginian	6,670,725	6,952,956	6,402,056	5,674,545
Chesapeake and Ohio	9,851,800	8,327,775	6,266,985	5,601,610
Totals	38,506,465	35,778,101	33,768,766	28,719,055

Tonnage Hauled on Norfolk & Western R.R.

(In Net Tons)

	1924	1923	1922	1921	1920
Pocahontas District	16,866,150	16,105,825	16,675,980	13,352,300	
Tug River District	5,117,790	4,391,545	4,423,745	4,090,600	
Thacker District	6,996,815	6,227,365	5,923,830	3,868,900	
Clinch Valley	1,571,255	1,668,205	2,020,940	1,159,100	
Kenova	2,883,155	2,483,345	1,753,780	808,900	
Totals	33,435,165	30,876,285	30,798,275	23,444,374	25,314,585

Production of Smokeless Shippers Who Consume Their Own Output (Captive Coal)

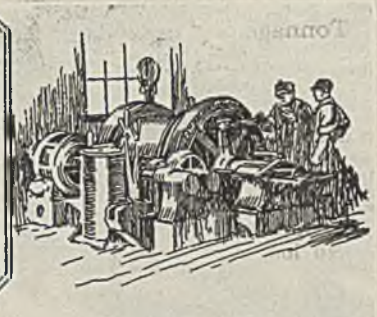
(In Net Tons)

	1924	1923	1922	1921	1920
Pocahontas District					
U. S. Coal & Coke Co.	3,116,815	4,099,535	3,665,220	2,229,800	3,310,050
Algonquin Steel	393,065	265,970	431,700	241,100	250,450
Byproducts Pocahontas	.....	83,135	110,650	91,250	42,359
Tug River District					
Solvay Collieries	.....	473,615	449,738	225,900	429,150
Henry Ford	333,550	307,095	27,885	none	none
New River District					
Milwaukee Coke & Gas	235,960	227,155	69,560	78,470	286,160
Richmond Ry. & Power	104,129	90,397	129,061	149,282	106,826
Totals	4,183,519	5,546,902	4,883,794	3,015,802	4,424,986

Miners Lose Outlaw Strike Penalties "For Keeps"

An agreement between an operator and miners by which the employees agree that the operator may penalize them for an outlaw strike is valid and legal, according to a ruling of a court in Vigo County, Indiana, March 16. The ruling came in a suit of several miners against the Zimmerman Coal Co. of Terre Haute, in which several miners asked the court to order the company to return to them the money held out of their pay about three years ago, when they went on an outlaw strike. The company penalized the men at the rate of $4 a day. Harold Henderson, attorney for District No. 11, United Mine Workers, acted as counsel for the company.

Practical Pointers For Electrical And Mechanical Men



Bush Worn Mine-Car Wheels with Brass

It is somewhat unusual to see worn mine car wheels being reclaimed. The relatively low cost per pound of car-wheel material makes it uneconomical to spend over an hour in repairing a wheel. This means that the shop where such work is done must be equipped with whatever special tools are necessary to reduce the labor to a minimum. The possible margin of saving is so small that it is almost out of the question to pay transportation charges and a profit to a commercial shop for doing this work. Consequently, if repairs of this kind are to be done at all they must be handled at the mine.

The Sunday Creek Coal Co. makes a regular practice of repairing plain-bearing mine-car wheels in its central shop at Corning, Ohio. The repair consists of boring out the worn hub, and bushing the wheel with a brass sleeve. No attempt is made to repair wheels having damaged treads or flanges. Cases of this kind are few however, most of the defective wheels being removed because of worn hubs.

The time-saving method of boring out a worn wheel on a radial drill press is shown in Fig. 2. The tool used is a 2¾-in. adjustable rose reamer having cutters made from high-speed tool steel. The reamer here shown has already bored over 300 wheels and as yet has not worn enough to make readjustment of the cutters necessary. The end faces of the cutters, which do practically all the work, are ground slightly whenever the tool shows signs of dullness. The wheel to be bored is clamped in a lathe chuck which is fastened on the table of a drill press. After the reamer is started into the wheel hub, a slow feed, which requires about 15 minutes to complete the cut is put on the machine. During this time the mechanic doing the work is free to perform other duties.

Referring to Fig. 1, the wheel at the left is one with a badly worn hub. That in the center has been reamed out ready for bushing and the one at the right has been fitted with a brass sleeve. Although there is a wheel press in the shop it is not used for forcing the brass bushings into the wheels. Instead this work is done with a sledge, using as a driving mandrel the short piece of steel that can be seen lying on the floor in front of the center wheel. This method is much quicker than using the press, yet the bushings can be put in place with a sufficiently tight fit (about 20 tons) so that there will be no trouble from loosening.

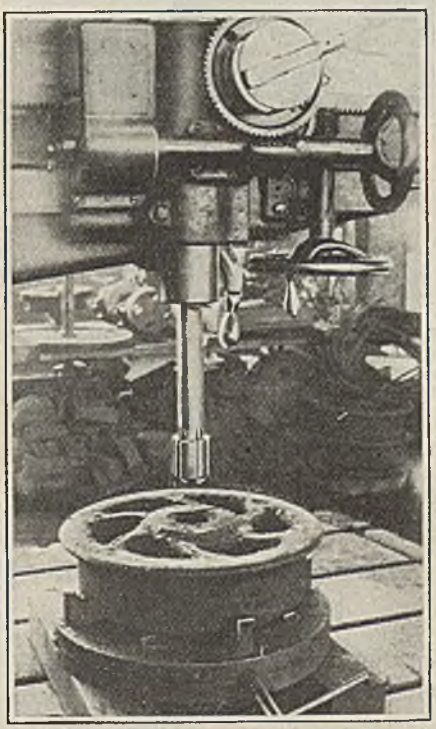


Fig. 2—Much Quicker than a Lathe

Boring the wheels on a radial drill instead of in a lathe is much quicker, and more certain as to results. The reamer here shown has bored over 300 wheels without having the cutters readjusted.

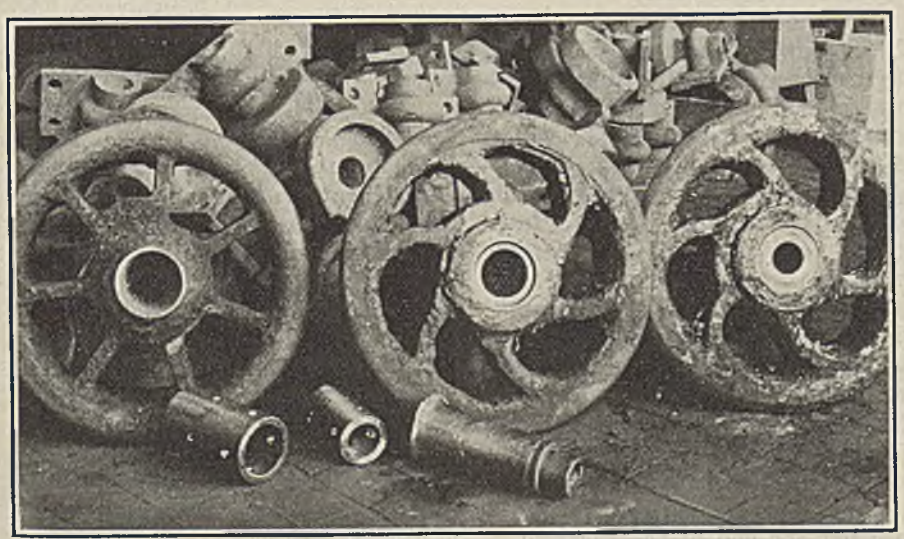


Fig. 1—Bushed Wheels Are Considered Better Than New Ones

From left to right are: A wheel with a badly worn hub, a worn wheel that has been reamed on the radial drill, and one that is complete with a new bushing. In the foreground, at the left, is the jig into which the brass bushing is inserted when drilling the oil holes. In the center is a finished bushing and at the right is the mandrel used when driving a bushing into a wheel.

Brass bushings used in the repair of mine-car wheels are cast and machined in the Corning shop. Fig. 3 shows a bushing being bored and turned to size in a turret lathe. In one position of the turret a tool faces the end of the rough brass tube, and in the next position are mounted the boring and turning tools. This arrangement cuts the cost of machining to a low figure, but, like the reaming process, this work does not require the continuous attention of a mechanic.

The drilling of oil holes in the brass bushings is another operation that is made easy by the use of a

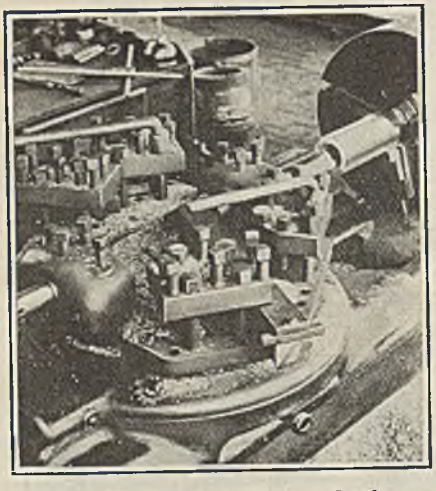


Fig. 3—Finish in Turret Lathe

The bushings are bored and turned at the same time, the first cut being also the finishing cut. A facing tool is mounted in one position, or port, of the turret. The various operations necessary for finishing a bushing can be performed in a turret lathe in much less time than in an ordinary engine lathe.

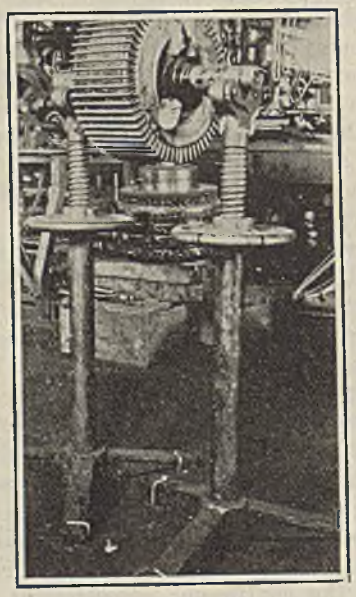
special device. Referring again to Fig. 1 this tool or jig can be seen in front of the wheel to the left. It consists of a steel tube with holes drilled through it at the proper positions to match the grease ducts in the wheel casting. After a bushing has been bored and turned to size it is slipped inside this jig and clamped in place with a hollow-head setscrew. The jig containing the bushing is then supported in a V-block on the table of a drill press and the required holes quickly drilled in their correct positions. A finished bushing with oil holes drilled through its sides may be seen in the center foreground of Fig. 1.

C. E. Starbuck, shop foreman, states that the actual labor and material cost of bushing a wheel is approximately $1.50, and that the repaired wheels are better than new ones because they have a brass rather than a cast-iron bearing surface. During the last two years the average cost of new plain-bearing wheels purchased by the Sunday Creek company has been approximately $4.65 each. This would indicate a saving of about $3 per wheel repaired. The overhead expense that can justly be charged against this work is small because none of the machine tools were purchased specially for this purpose, and the special reamer and jig are comparatively inexpensive.

Discarded Jacks Used for Armature Stands

Handy equipment spells, "more and better work." The armature stands used in the winding shop of a large coal mining company located in Ohio, are of interest because of their special design and the advantages gained thereby.

Jackscrews and handwheels from discarded mining machines were used in the construction of these stands. The supporting base is a short length of 2-in. standard pipe set in the socket of a three-leg cast-iron base. The two brass rollers on which the armature shaft rests are mounted between steel plates which in turn are electrically welded to the top of the screw. The company shop is equipped with three pairs of stands, each pair having a different spacing of brass rollers, this in order to accommodate the ordinary range of armature-shaft sizes.



Adjusted to Convenient Height

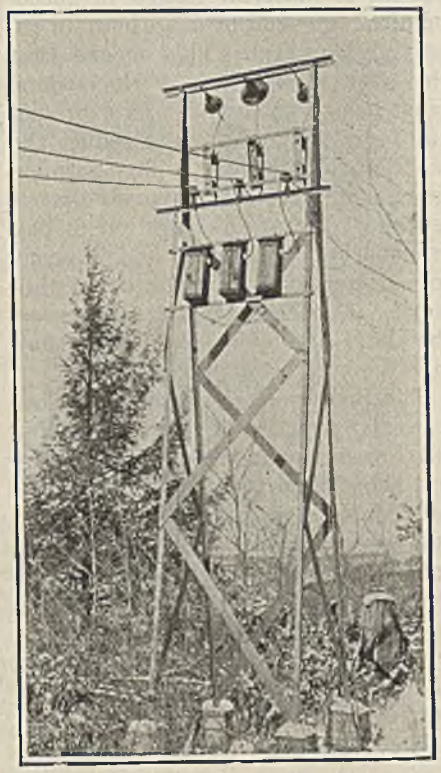
The jackscrews and handwheels were removed from discarded mining machines. Steel plates welded to the screws support the brass rollers on which the armature shaft rests.

It is evident that the arrangement of a separate stand for each end of the armature shaft inherently obviates the problem of adjustment for armature-shaft length. The screw adjustment for height is an important feature. For efficient operation, different men require the work to be held at radically different heights from the floor. Even if the same man were to do all the armature winding he would want an adjustable stand in order to compensate for armatures of various diameters.

The company's shop foreman explained that, when soldering commutator leads, the jackscrew arrangement provides a convenient means of lowering one end of the shaft so as to counteract the tendency of excess solder to run in back of the commutator risers. The pair of stands pictured is used for ring-wound armatures with which type the conductors must be much pulled and jerked. For this reason this pair of stands is spiked to the floor. Such a fastening is not necessary when working on common form-wound armatures.

Steel Poles for All Light And Power Circuits

The rapid decay of wood poles when used for supporting power and lighting lines has turned the Raleigh Coal & Coke Co. to the exclusive use of steel for this purpose. The illustration shows the home-made steel pole which forms the dead-end tower

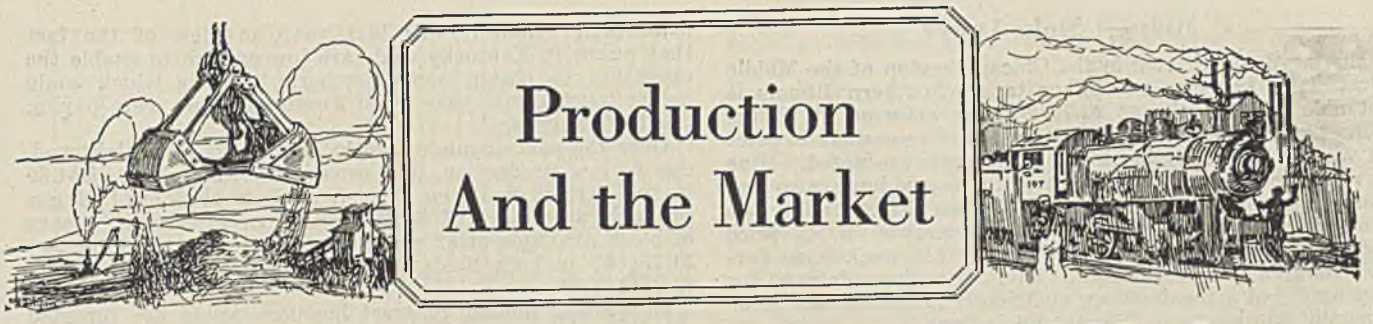


All Circuits on Steel Poles

Power, light and telephone lines of the Raleigh Coal & Coke Co. are carried on steel poles. This 18-ft. tower is the dead-end of a 2,300-volt fan circuit.

fan at the Raleigh No. 6 mine. Were it not for the disconnecting switches and lightning arresters mounted on the tower it might be taken for one supporting a high-voltage transmission line rather than one only 18 ft. high carrying a small capacity 2,300-volt circuit.

This pole being one of a standard design, all pieces were cut and drilled in the shop ready for bolting together where set up. The concrete in which the legs are set is carried well above the ground. This is done to prevent the tower from rusting at the bottom. The construction illustrated is typical of all of the power distribution lines owned by the Raleigh Coal & Coke Co.



Production And the Market

Movement of Bituminous Coal in All Markets Proves Herculean Task

Efforts to move bituminous coal seem to grow more difficult daily. Domestic grades are practically stagnant in the Middle West and only the belief that prices will advance soon in the wake of more mine shutdowns is preserving a semblance of firmness in steam coals. There is no edge to demand for anything, but activity in screenings is such that some crushing of larger sizes has begun in Illinois and Indiana. Business is quite slow in Kentucky, though the general situation is somewhat better than last year, for, with wages lower, Kentucky mines are able to get in on more northern business than then. Considerable contract business is pending now. Prices are weak, except for screenings, which have tightened. Output at West Virginia mines, both smokeless and high volatile, is limited, as demand for all grades is sluggish.

At the head of the lakes industrial demand continues to improve, but dealers are backward about buying, expecting a recession in prices when navigation opens. The extent of operations at the iron mines is problematical, some threatening not to open unless prices are better. The docks seem to be sitting pretty, with small stocks and every prospect of cleaning up without difficulty. Milwaukee docks are practically clear already and preparations are being made to take in new supplies when the lakes are open. The trade in Utah, Colorado, Kansas and the Southwest is pretty weak, except that screenings are selling in the latter section. Sporadic touches of winter in recent weeks have cleaned up retail yards fairly well.

Lake business is becoming a factor in the trade at Cincinnati, considerable tonnage having already gone forward for shipment when the first boats clear for the Northwest. Spot prices have ruled on this business. In general, however, the price situation is a highly colored affair, only slack being strong. Buying at Columbus is practically limited to current requirements. In eastern Ohio output has been helped somewhat by shipments on expiring contracts, but rising temperature has taken the life out of spot demand. Extreme dullness continues in Pittsburgh with no quotable change in prices. The Buffalo market, too, lacks life.

The new coal year opens drearily in New England, the industrial situation being slack and stocks in the hands of consumers such that unless output is rigidly held close to requirements prices are likely to slump even further. Developments are lacking in the New York market, where demand is low and prices weak. Improvement is backward at Philadelphia and trade at Baltimore is flat. At Birmingham steam demand is fairly active and contracting is pretty good.

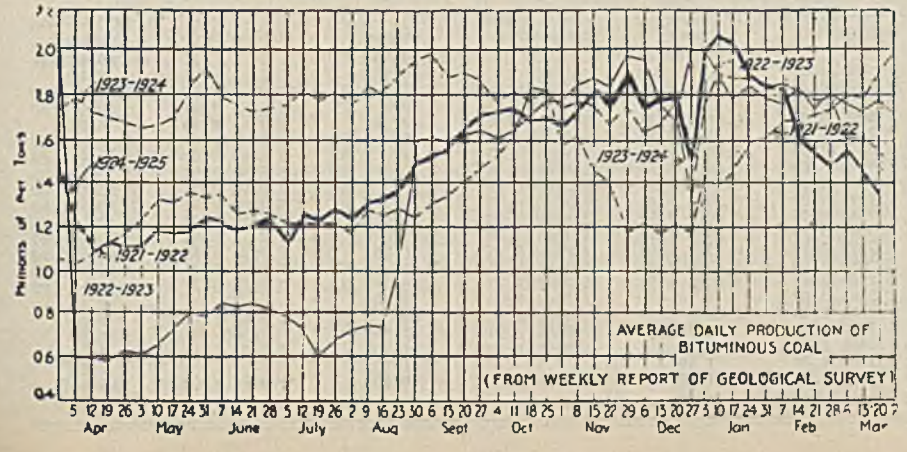
Shutdowns Help Hard Coal

The anthracite trade has not yet felt the full effect of reduced prices and new size standards. Old-line companies, however, are said to be well sold up for this month and independent coals are moving quite briskly, helped by the idleness of a number of mines. Some independents are so well booked on stove that they urge pro rata shares of egg and chestnut on stove orders.

Coal Age Index of spot prices of bituminous coal again has fallen, standing on March 30 at 161, the corresponding price for which is $1.95, compared with 163 and $1.97 respectively on March 23.

Dumpings of coal for all accounts at Hampton Roads in the week ended March 26 totaled 399,686 net tons, compared with 434,437 tons in the preceding week.

Production of bituminous coal again declined during the week ended March 21, when, according to the Geological Survey, the output was estimated at 8,295,000 net tons, a decrease of 346,000 tons from the preceding week, as shown by revised figures. Anthracite output in the week ended March 21 was 1,513,000 net tons, compared with 1,656,000 tons in the previous week.



Estimates of Production

(Net Tons)

	1923–1924	1924–1925
BITUMINOUS		
March 7	9,944,000	9,384,000
March 14 (*a*)	9,943,000	8,641,000
March 21 (*b*)	9,573,000	8,295,000
Daily average	1,596,000	1,382,000
Coal yr. to date (*c*)	548,689,000	459,622,000
Daily av. to date	1,842,000	1,540,000
ANTHRACITE		
March 7	1,882,000	1,655,000
March 14	1,941,000	1,656,000
March 21 (*b*)	1,804,000	1,513,000
Coal yr. to date (*c*)	89,356,000	85,974,000
COKE		
March 14 (*a*)	307,000	243,000
March 21 (*b*)	315,000	226,000
Cal. yr. to date (*c*)	3,286,000	2,938,000

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus one day's production to equalize number of days in the two years.

Midwest Sinks Lower

Moving domestic coal in the Chicago region of the Middle West daily becomes a tougher task. Southern Illinois is not able to maintain its $2.75 circular price on all of the thin stream of domestic coal it sells and recessions in price on various Kentucky block and lump coals are noted. Mine run in such fields as produce it in any volume also has slumped in price. Only steam coals are firm, possibly because buyers foresee an inevitable increase in its price during April, when the shutdowns of this week have further reduced Midwest output. There is no keen demand for anything, but screenings are sufficiently active so that some crushing has begun in Illinois and Indiana.

Pocahontas lump and egg into the Chicago territory no longer bring $3.25 from anybody; $3 is the absolute top, with gradations below. Kentucky domestics have hard sledding to bring the circular in this region. Anthracite prices dropped as of April 1 but Chicago quotations were not to be announced until that day. The largest cuts were to reach 50c. on certain sizes.

Kentucky Screenings Stiffer

Conditions continue quite slow in the coal industry of Kentucky, without much prospect of any immediate revival of business. It is admitted that the general situation is a little better than it was last year, in view of the fact that prices in Kentucky coals are low enough to enable the operators to obtain some northern business which could not be touched last year when Kentucky mines were paying the 1919 wage scale.

Over the past couple of weeks screenings have tightened, due to low production, and prices now range at $1@$1.30 in the various fields on this size. Best block coal of gas grade is at a peak of $2.25, instead of $2.50, with plenty of block available at $2 and even under. Egg and lump are $1.75@$2 in both fields; nut, $1.50@$1.75, and mine run, $1.25@$1.50.

In quoting annual contract business prices are reported at around $1.25 for screenings and $1.40@$1.75 for mine run. It is reported that there is a good deal of contract business pending. The Louisville & Nashville R.R. contract expired April 1, and that road probably will place about the same tonnage as last year. A number of industrial concerns also have inquiries out.

With light demand for coal and many mines down and others working one to two days a week in most instances, there is no car or labor shortage, and the only trouble is that of getting business and a price. The mine strike in western Kentucky is a forgotten issue. Conditions in Kentucky fields are not at all good, as shown by the number of mines that are in financial troubles, but in spite of such

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	Mar. 31 1924	Mar. 16 1925	Mar. 23 1925	Mar. 30 1925†
Smokeless lump	Columbus	$3.25	$3.10	$3.10	$3.00@$3.25
Smokeless mine run	Columbus	2.10	1.90	1.90	1.75@ 2.10
Smokeless screenings	Columbus	1.60	1.15	1.15	**1.10@ 1.30**
Smokeless lump	Chicago	3.25	3.10	3.10	*2.75@ 3.00*
Smokeless mine run	Chicago	2.10	1.75	1.75	1.50@ 2.00
Smokeless lump	Cincinnati	3.25	3.25	3.25	*2.75@ 3.00*
Smokeless mine run	Cincinnati	2.10	2.00	2.00	*1.75@ 2.00*
Smokeless screenings	Cincinnati	1.80	1.60	1.50	1.50
*Smokeless mine run	Boston	4.20	4.30	4.35	*4.20@ 4.50*
Clearfield mine run	Boston	2.00	1.95	1.95	1.75@ 2.20
Cambria mine run	Boston	2.55	2.30	2.30	2.10@ 2.50
Somerset mine run	Boston	2.10	2.10	2.10	1.90@ 2.35
Pool 1 (Navy Standard)	New York	3.00	2.65	2.65	2.50@ 2.85
Pool 1 (Navy Standard)	Philadelphia	3.00	2.65	2.65	2.50@ 2.85
Pool 1 (Navy Standard)	Baltimore	....	2.10	2.10	2.00@ 2.25
Pool 9 (Super. Low Vol.)	New York	2.20	2.05	2.05	1.90@ 2.25
Pool 9 (Super. Low Vol.)	Philadelphia	2.20	2.00	2.00	1.85@ 2.20
Pool 9 (Super. Low Vol.)	Baltimore	2.25	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.)	New York	1.85	1.75	1.80	1.65@ 2.00
Pool 10 (H.Gr.Low Vol.)	Philadelphia	1.85	1.65	1.65	1.55@ 1.80
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.90	1.75	1.75	1.65@ 1.85
Pool 11 (Low Vol.)	New York	1.40	1.55	1.55	1.40@ 1.70
Pool 11 (Low Vol.)	Philadelphia	1.50	1.55	1.55	1.50@ 1.60
Pool 11 (Low Vol.)	Baltimore	1.60	1.50	1.50	1.45@ 1.55
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.50	1.50	1.50	1.40@ 1.60
Pool 54-64 (Gas and St.)	Philadelphia	1.55	1.45	1.45	1.40@ 1.50
Pool 54-64 (Gas and St.)	Baltimore	1.70	1.70	1.70	1.65@ 1.75
Pittsburgh sc'd gas	Pittsburgh	2.55	2.40	2.40	2.30@ 2.50
Pittsburgh gas mine run	Pittsburgh	2.30	2.00	2.00	1.95@ 2.10
Pittsburgh mine run (St.)	Pittsburgh	2.10	1.80	1.80	1.75@ 1.90
Pittsburgh slack (Gas)	Pittsburgh	1.25	1.30	1.35	1.30@ 1.40
Kanawha lump	Columbus	2.55	2.10	2.10	2.00@ 2.25
Kanawha mine run	Columbus	1.55	1.50	1.50	1.40@ 1.60
Kanawha screenings	Columbus	1.05	.55	.80	**.90@ 1.00**
W. Va. lump	Cincinnati	2.25	2.05	2.10	*1.75@ 2.25*
W. Va. gas mine run	Cincinnati	1.30	1.35	1.40	*1.25@ 1.50*
W. Va. steam mine run	Cincinnati	1.30	1.30	1.30	*1.15@ 1.35*
W. Va. screenings	Cincinnati	.85	1.05	.90	**.90@ 1.10**
Hocking lump	Columbus	2.55	2.35	2.35	*2.15@ 2.40*
Hocking mine run	Columbus	1.65	1.45	1.45	1.35@ 1.60
Hocking screenings	Columbus	1.05	.85	1.05	**1.10@ 1.25**
Pitts. No. 8 lump	Cleveland	2.35	2.30	2.30	*1.85@ 2.65*
Pitts. No. 8 mine run	Cleveland	1.80	1.80	1.80	*1.75@ 1.80*
Pitts. No. 8 screening	Cleveland	1.20	1.35	1.35	**1.35@ 1.45**

Midwest	Market Quoted	Mar. 31 1924	Mar. 16 1925	Mar. 23 1925	Mar. 30 1925†
Franklin, Ill. lump	Chicago	$2.85	$3.10	$2.75	*$2.50@$2.75*
Franklin, Ill. mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Franklin, Ill. screenings	Chicago	2.05	2.10	1.95	1.90@ 2.00
Central, Ill. lump	Chicago	2.60	2.50	2.35	2.25@ 2.50
Central, Ill. mine run	Chicago	2.10	2.20	2.20	*1.90@ 2.00*
Central, Ill. screenings	Chicago	1.65	1.90	1.90	1.80@ 2.00
Ind. 4th Vein lump	Chicago	2.85	2.85	2.60	2.50@ 2.75
Ind. 4th Vein mine run	Chicago	2.35	2.35	2.35	*2.00@ 2.25*
Ind. 4th Vein screenings	Chicago	1.95	1.95	1.95	1.90@ 2.00
Ind. 5th Vein lump	Chicago	2.60	2.30	2.30	*2.00@ 2.25*
Ind. 5th Vein mine run	Chicago	2.10	2.10	2.10	*1.90@ 2.00*
Ind. 5th Vein screenings	Chicago	1.65	1.80	1.80	*1.60@ 1.80*
Mt. Olive lump	St. Louis	2.85	2.85	2.85	2.75@ 3.00
Mt. Olive mine run	St. Louis	2.50	2.35	2.35	2.25@ 2.50
Mt. Olive screenings	St. Louis	1.50	1.75	1.75	1.75
Standard lump	St. Louis	2.35	2.50	2.35	2.25@ 2.50
Standard mine run	St. Louis	1.95	1.80	1.80	1.75@ 1.65
Standard screenings	St. Louis	1.20	1.55	1.60	1.50@ 1.75
West Ky. block‡	Louisville	2.75	1.85	1.85	1.75@ 2.00
West Ky. mine run	Louisville	1.60	1.35	1.35	1.25@ 1.50
West Ky. screenings	Louisville	1.00	1.25	1.25	1.25@ 1.30
West Ky. block‡	Chicago	2.60	1.85	1.85	1.75@ 2.00
West Ky. mine run	Chicago	1.10	1.25	1.25	**1.15@ 1.50**
South and Southwest					
Big Seam lump	Birmingham	2.60	2.75	2.35	2.25@ 2.50
Big Seam mine run	Birmingham	2.00	1.75	1.75	1.50@ 2.00
Big Seam (washed)	Birmingham	2.20	1.85	1.85	1.75@ 2.00
S. E. Ky. block‡	Chicago	2.60	2.25	2.10	2.00@ 2.25
S. E. Ky. mine run	Chicago	1.60	1.35	1.35	1.25@ 1.50
S. E. Ky. block‡	Louisville	3.00	2.25	2.10	2.00@ 2.25
S. E. Ky. mine run	Louisville	1.70	1.35	1.35	1.25@ 1.50
S. E. Ky. screenings	Louisville	.95	1.00	.95	**1.00@ 1.15**
S. E. Ky. block‡	Cincinnati	2.10	2.10	2.25	*2.00@ 2.25*
S. E. Ky. mine run	Cincinnati	1.35	1.35	1.35	*1.15@ 1.50*
S. E. Ky. screenings	Cincinnati	.85	1.10	1.05	*.90@ 1.15*
Kansas lump	Kansas City	4.50	4.25	4.25	4.00@ 4.50
Kansas mine run	Kansas City	3.25	2.00	2.85	2.75@ 3.00
Kansas screenings	Kansas City	2.50	2.60	2.75	2.75

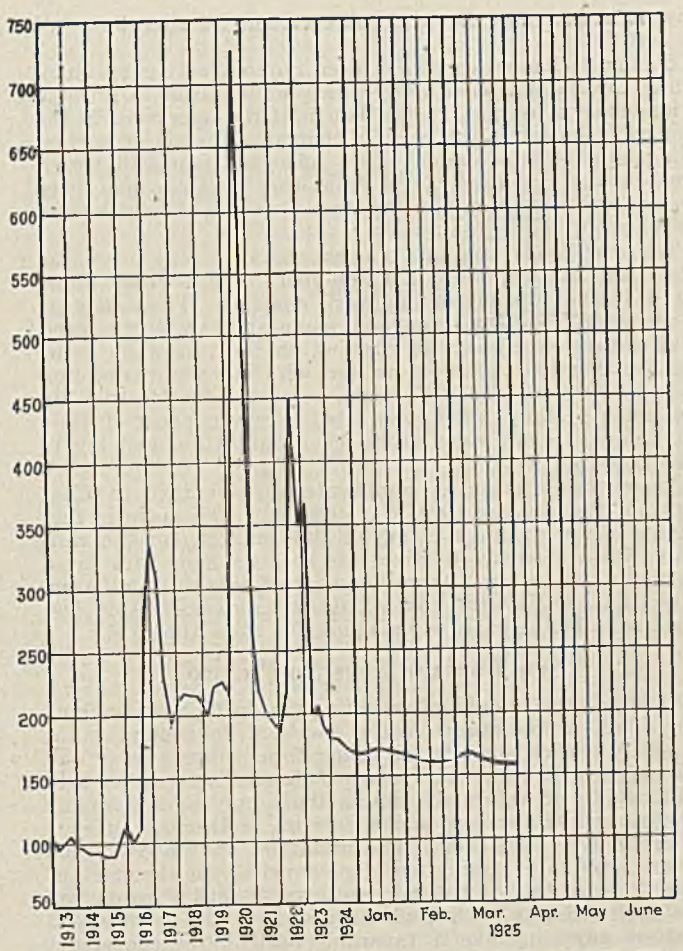
*Gross tons, f.o.b. vessel, Hampton Roads. † Advances over previous week shown in heavy type; declines in *italics*.

‡ The term block is used in order to conform to local practice, but the same coal is being quoted as heretofore.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	March 31, 1924 Independent	March 31, 1924 Company	March 3, 1925 Independent	March 3, 1925 Company	March 30, 1925† Independent	March 30, 1925† Company
Broken	New York	$2.34	.....	$8.00@$9.25	.....	$8.00@$9.25	.....	*$8.00@$8.50*
Broken	Philadelphia	2.39	.....	.....	.....	9.15	.....	9.15
Egg	New York	2.34	$7.75@$8.25	8.25@ 9.25	$8.25@$8.50	8.25@ 9.25	$8.25@$8.50	*8.25@ 8.50*
Egg	Philadelphia	2.39	8.50@10.00	8.75@ 9.25	8.65@ 9.15	8.80@ 9.25	*8.45@ 8.50*	*8.30@ 8.50*
Egg	Chicago*	5.06	7.50@ 8.80	8.00@ 8.35	8.17@ 8.40	8.08	8.17@ 8.40	8.08
Stove	New York	2.34	8.75@ 9.25	8.25@ 9.25	8.50@ 8.75	8.50@ 9.50	*8.25@ 8.75*	*8.50@ 8.90*
Stove	Philadelphia	2.39	9.85@11.00	8.90@ 9.25	8.90@ 9.65	9.15@ 9.50	*8.85@ 8.90*	*8.75@ 8.90*
Stove	Chicago*	5.06	7.95@ 9.25	8.00@ 8.35	8.80@ 9.00	8.53@ 8.65	8.80@ 9.00	8.53@ 8.65
Chestnut	New York	2.34	8.75@ 9.25	8.25@ 9.25	8.50@ 8.75	8.25@ 9.40	*8.25@ 8.75*	*8.25@ 8.50*
Chestnut	Philadelphia	2.39	9.85@11.00	8.90@ 9.25	8.90@ 9.65	9.25@ 9.40	*8.45@ 8.50*	*8.40@ 8.50*
Chestnut	Chicago*	5.06	7.95@ 9.25	8.00@ 8.35	8.61@ 9.00	8.40@ 8.41	8.61@ 9.00	8.40@ 8.41
Pea	New York	2.22	4.50@ 5.25	5.75@ 6.65	4.25@ 5.00	5.25@ 6.00	4.25@ 5.00	*5.00@ 6.50*
Pea	Philadelphia	2.14	4.75@ 6.50	6.35@ 6.60	4.75@ 5.75	6.00	**5.00@ 5.30**	*6.25@ 5.30*
Pea	Chicago*	4 79	4.50@ 5.60	5.40@ 6.05	5.36@ 5.75	5.36@ 5.95	5.36@ 5.75	5.36@ 5.95
Buckwheat No. 1	New York	2.22	2.25@ 2.75	3.00@ 3.50	2.00@ 2.75	2.50@ 3.00	2.00@ 2.75	2.50@ 3.00
Buckwheat No 1	Philadelphia	2.14	2.25@ 3.00	3.50	2.25@ 3.00	3.00	*2.50*	*2.50*
Rice	New York	2.22	1.75@ 2.25	2.00@ 2.50	1.90@ 2.25	2.00@ 2.25	*1.90@ 2.15*	*2.00*
Rice	Philadelphia	2.14	1.75@ 2.25	2.50	1.70@ 2.25	2.25	**2 00**	*2.00*
Barley	New York	2 22	1.50@ 1.75	1.50	1.35@ 1.50	1.50	1.35@ 1.50	1.50
Barley	Philadelphia	2.14	1.25@ 1.50	1.50	1.50	1.50	1.50	1.50
Birdseye	New York	2.22	1.60@ 1.75	1.60	1.40@ 1.60	1.60	1.40@ 1.60	1.60

* Net tons, f.o.b. mines. †Advances over previous week shown in heavy type; declines in *italics*.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925			1924
	March 30	March 23	March 16	March 31
Index	161	163	165	173
Weighted averaged price	$1.95	$1.97	$1.99	$2.09

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

conditions there is a lot of argument being heard for a coal tonnage tax.

There has been no material change in the situation in West Virginia either as to smokeless or high-volatile coals, except that the demand has ebbed to an even greater extent at tidewater and in Eastern markets. Production naturally is limited, especially in all high-volatile territory in both northern and southern West Virginia.

It has become necessary to curtail production in the Upper Potomac and western Maryland fields, not only because of the lack of any general open-market demand but also because of expiration of contracts. Few purchasers are buying for more than immediate requirements.

In Virginia territory production is somewhat limited owing to expiring contracts and yet this field appears to have a larger run of contract business than many other regions, which is keeping output well above 50 per cent.

Northwest Awaits Navigation

Pocahontas took a tumble at Duluth during the week. Lump dropped $1, making the price $8 at the dock. Mine run and screenings remain the same at $5.50 and $4.25@$4.50. The cause of the decrease is the shipping to Minneapolis of much Pocahontas all-rail and sudden warm weather in this section, which has raised Cain with heating coals in general. Prices in other grades, both hard and soft, remain the same.

Dealers are buying very little as they expect a general drop in price as soon as navigation opens. The docks are sitting pretty, however, as their stocks are small and any kind of normal consumption will clean them up.

Demand from industries is better, and continues to improve as each day goes by. The Northwest is not out of the trough as yet as far as business is concerned, but the dawn seems just around the corner, and all are willing to give it the benefit of the doubt and get ready to do business.

Iron mines are going to open, it is said, but this is still problematical. Two mines placed orders this week, and several others are dickering. The ore price has not as yet been fixed for the season, however, and May 1 is the date for tax assessment, so few are anxious to get ore above the ground just yet.

The Mesaba Iron Co., the biggest independent on the range, has announced that it will not mine unless prices are better. Last year this company cancelled 25,000 tons with one dock alone, so it can be seen that its withdrawal would make a hole in the consumption.

The Milwaukee docks virtually are clear of coal, except for the amounts of the various grades necessary for the "piecing out," and dealers are making repairs to inclosures and bins preparatory to taking in new stocks from down the lakes, which will begin to arrive in a few weeks. Industries are taking their normal share of the coal on hand, but warm weather has caused a quieting down of the demand for domestic use. Householders now order reluctantly, although they know that it will be fully six weeks before it will be safe to face the immediate future with an empty bin.

Western Trade Is Lifeless

Screenings alone are selling in the Southwest. Retail yards have been pretty well cleaned up by sporadic returns of winter in the last few weeks, but weather has had no effect on the wholesale market of domestic grades. Henryetta (Okla.) lump is quoted at $3.75; nut at $3.50; mine run, $3.25; screenings, $2.

Scarcely any change is observable in the Colorado market, business being comparatively quiet. Calumet No. 1 and No. 2 mines of southern Colorado have petitioned the State Industrial Commission for authority to reduce wages to the 1917 scale, as have other mines in the district. The prices for Dawson (N. M.) domestic lump and fancy egg, which comes from the Raton field, tributary to the Trinidad field, is $3.50; fancy nut, $3.25; fancy pea, $3. The April price for Walsenburg domestic lump is $4.25; nut, $4; Segundo coke, $7.50; Crested Butte anthracite, Nos. 1, 2, 3 and 5 from the Horace mine, $7.75, and from the Elk Mountain mine $6.25@$6.50.

The Utah market is weak all around. Only slack is in any demand. Mines are working a little less than two days a week, with no immediate prospects of an improvement. The mine and smelter industries continue to be the chief industrial consumers, though the cement plants are expected to be in the market for coal again soon. The domestic market is taking intermediate sizes in hand-to-mouth orders. Business is reported to be quiet in every section of the wide territory served. Prices seem to be firm.

Lake Trade Now a Factor in Cincinnati

Prices paid by the Louisville & Nashville R.R. on its new fuel contract elicited much interest in Cincinnati in the past week. It seems generally known that the prices ranged from $1.45 to $1.60 a ton, or 15c. to 30c. a ton under the Norfolk & Western contract.

Lake business is beginning to become more a factor in the general turnover. Some tonnage has already moved to loading points with the expectation of going forward on the first of the ore boats that move into Lake Superior. Prices on this generally have been "spot," though all sorts of quotations can be heard on the season's contract movement.

So far as the present turnover is concerned there is such a jumble of prices that Joseph's coat would look like a broadcloth suit in comparison. Out of all the welter only one strong grade remains—slack. The price cutters have on occasions pounded the price below $1, but it is safe to say that there is more going over that figure than under it. Mine run weakened once more with the switch from the screens to the raw coal in instances where mines were running no matter what the cost. Egg, lump and block are still a drug.

Quite a surprise came in the smokeless trade when it was learned the fore part of the week that some of the standard Pocahontas producers were making a price of

$2.75 for lump and egg "to the trade." Quotations were still maintained at $3 but the first of the month circular of $3.50 was generally being ignored. It seems generally conceded that the circulars for April will go out at $3. Quotations on mine run are still made at $2, but here there have been concessions also. The one firm spot is screenings at $1.50.

River business is booming, with more tonnage entering the local harbor than in months past. Several of the towing concerns have been moving coal for stockpiles at Madison, Aurora, Louisville and other lower river points. Retail business is draggy and lifeless.

Hand-to-Mouth Buying at Columbus

At Columbus buying is limited largely to current needs and as a result there is no life to the trade. While the lake season is close at hand there is very little doing as far as Ohio mined coal is concerned, as southern Ohio operators cannot compete with West Virginia prices. Just what the lake prices will be is a matter of conjecture. Lump in many parts of West Virginia is selling at very low prices and lake shippers hope to obtain these quotations. Indications point to a rather early opening of the lake trade.

Warmer weather has stopped most domestic movement. Retailers have fair stocks and they are cleaning up to get ready for the summer stocking season. The bulk of the movement is from the splint fields of West Virginia and from Kentucky operations. Only a limited amount of lump is produced in the southern Ohio field. Retail prices in Columbus continue weak and irregular with much cutting on the part of certain dealers in an effort to clean up their yards.

Steam business is quiet with only a small tonnage moving. Outside of buying by utilities and railroads there is not much movement. Contracting is not brisk and it is believed that a large number of users will buy on the open market. There is still some consignment tonnage, but the amount has been reduced to a large degree. Contract prices will be 20c. to 30c. less than last year.

Production in the southern Ohio field is around 12 per cent of capacity and this is coming largely from co-operative mines, which are about the only operations that can compete with West Virginia producers.

While operations have been bolstered up somewhat in eastern Ohio during the past two weeks due to shipments on contracts which were about to expire, at the same time output continues very low because spot demand has dwindled concurrently with rising temperatures.

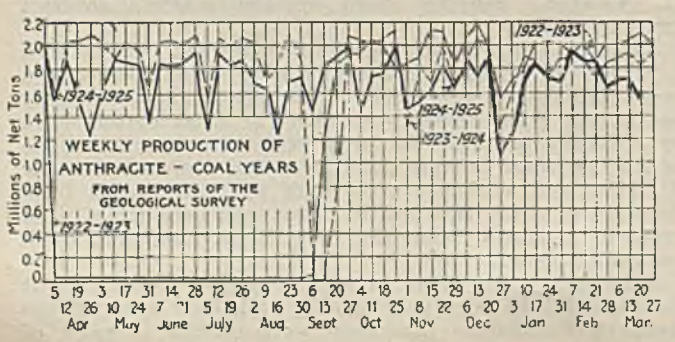
Domestic consumers have almost totally shut off purchases and retail yards are doing little if any buying, as present stocks are ample. Steam consumers likewise have found their needs at least not increasing and a hand-to-mouth policy of buying prevails throughout this trade. Industry has not improved perceptibly, nor has the volume of railroad traffic shown any upward trend.

There has been little change in spot prices except that screenings have advanced 5c. per ton, due to the small supply available, slack being quoted at $1.35@$1.40 and nut-and-slack $1.40@$1.45, f.o.b. eastern Ohio mines.

At the present time the eastern Ohio No. 8 field is operating about 33 per cent of potential capacity and after April 1 it is predicted this will drop to about 15 per cent.

Situation Uncertain at Pittsburgh

The market at Pittsburgh continues extremely dull, with no quotable change in prices. No precise information is obtainable at this writing as to the extent to which coal mines in the Pittsburgh district will be closed this month. Recent reports were that the closing would be general, but now it is said that a considerable volume of operation will be left.



So far as known there has been no contracting by union mines for the new coal year, which would seem to presage a lessening of output. Less than half the operation in the past year, however, has been on contracts, the major portion being against spot sales or on open contracts, in which the tonnage specified varied from time to time and there was opportunity from time to time to revise the settlement price by mutual consent.

The coal trade at Buffalo does not show any new life. About all that the bituminous shippers seem to take interest in is the outcome of the April changes. The coal year opens with next to no contracts made and few in prospect, with not a few mines still running on the last wage scale, because they had some orders and with many miners going back to work on the 1917 scale, in spite of opposition by the union. Many union men also are wondering if it is not time to break away from the organization and try to earn some money.

Again the situation is complicated by the turn to West Virginia for coal, because it is cheaper. The move is fast driving Pennsylvania fuel out of this market, for the railroads are still ready to give this coal its long haul for a matter of 15c. a ton. No adjustment of this discrimination is in sight, so that the control already gained by this coal is going to be increased right along for some time yet.

New England Sees No Pickup

April is no harbinger of an active season in New England this year. Ample stocks in the hands of consumers and a generally slack industrial situation foreshadow a very dull opening for the new coal year. Unless production is held down rigidly to reasonable limits there may be a complete slump in prices any day, and buyers are well aware of such a possibility. The least accumulation at the Hampton Roads piers is a signal for shaded prices on the part of more than a few of the agencies, and it takes resolution of a high order to withstand the pressure. In no direction is there anything like a favorable outlook for the steam trade, and there is every likelihood it will continue to drag along for months in its present unsatisfactory course.

At Hampton Roads there is practically no change in quotations for spot coal; $4.20 is still heard for No. 1 coal through certain channels, although a few interests are understood to have "pegged" their price at $4.50, take or leave. Apparently there is no contract business offering that is worth mentioning, and the bulk of New England tonnage moves forward on seasonal arrangements, many of them being instances where producers themselves market coal at this end over rehandling wharves of their own. Western demand is far from satisfactory, so the heavier proportion moves east to be forced more or less on a none too receptive market.

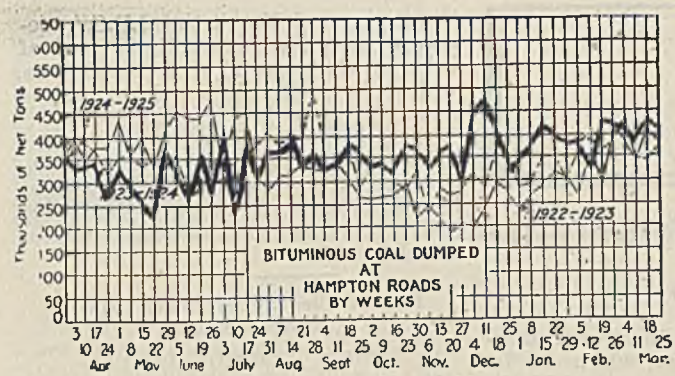
The all-rail situation is in no wise changed from the uniformly discouraging aspect it has presented now for many months. Little progress seems to be made from week to week in effecting modification of the wage scale, and neither sales nor prices show improvement.

Gleam of Hope Seen at New York

There were no outstanding developments in the soft-coal trade at New York last week. Demand is slow and prices remain low. While all admit that the situation is extremely dull, many believe the sun is breaking through the clouds. One reason is the closing of more mines, resulting in further reduction of output. With line demand quiet, shippers are slow about sending coal to tidewater except on consignment. Movement of the comparatively small tonnage of spot coal sent to New York is difficult, with the result that the situation is unsteady.

At Philadelphia no improvement is seen, as buying for current use by consumers seems to be in a slump. The one salvation of the present market is that the early spring is starting up such outdoor work as brick making, which line is calling a little more actively for coal. Cement mills also are increasing their requests for fuel, usually calling for slack, but supplementing the orders with mine-run, as slack is still scarce and in no way equal to demand.

Contract business is extremely quiet, and it looks now as if the bulk of the concerns who sought protection have come in. Others are buying in the open market much cheaper than they had hoped to do.



There is still considerable railroad tonnage that is not under contract, and the roads are not making any particular effort to store as they usually do when mining trouble threatens. The stocks carried all winter are still considerable, and the roads seem content to draw from these for a while, buying only a moderate amount from week to week.

Even though there were a few clearances during the week, the houses handling this business see nothing to enthuse about, although they do anticipate some improvement on account of some business that always turns up in the spring.

At Baltimore the market for soft coal of every kind continues extremely flat. Prices show no indication of revival, and the opinion of coal men here is that, unless the West Virginia walkout should prove more complete than anticipated, there will be more than sufficient coal to supply all needs as at present curtailed, and there will be no sharp and immediate advance in prices. At the present writing prices are on the same level as for several weeks past. The export situation continues to improve, there being a movement to South America, Mediterranean ports, Canada and Cuba.

There has been no material change in Birmingham market conditions as last reported. Domestic contracts are being made right along, but not as readily as a year ago, as the fact that some of the yards will have a considerable carryover tonnage has a dampening effect on the buying ardor; then too, the past year was not a specially good one for the retail trade, as there was little real winter weather and sales were comparatively light.

Steam demand is fairly active, spot buying holding up very well, all things considered, and the mines are able to move the output with reasonable promptness. Commercial contracts are being renewed about on the basis of spot quotations and tonnage previously taken. Carriers are taking a good tonnage, but not quite as much as a week or two back, when several lines were taking full quota deliveries on their contracts. While the demand for bunker fuel is not quite as strong as a month ago, the movement in this direction for direct bunkering and storage is holding up better than usual for this season.

Quotations for steam and domestic coal are holding firm.

The market for foundry coke is very active, $5.50 per net ton ovens being the ruling quotation. The tonnage available for the commercial trade is rather restricted at this time on account of furnace companies having practically no coke available for market, due to heavy demands from their own operations.

Anthracite Shows Signs of Perking Up

Anthracite demand at New York has not yet felt the effects of the reductions in prices announced by the larger companies last week. All of the big companies have issued prices for April, but there are reports that some slight adjustments may be expected soon. Reductions also have been made by retailers, who are now urging customers to put in winter coal early.

Some independent producers are so well sold up on stove that they are urging pro rata shares of either egg or chestnut where stove is wanted. Old-line companies are practically sold up for this month. Owing to the closing of many individual mines the movement of available independent coals is brisk and quotations are about on a level with company figures.

Producers look for a better demand for No. 1 buckwheat in view of the 50c. cut announced. Rice and barley are strong.

While "opening prices" have now been named by practically all the anthracite companies the trade in New England is not reacting with anything like the vigor of recent years. Retail dealers are carrying over large stocks owing to the mild weather of February and March, and there is much indifference over spring purchases.

Practically all of the producers on April 1 began shipping the new sizes of anthracite to Philadelphia. Much interest is manifest in the probable effect of the new arrangement. The early announcement of reduced spring prices by two large companies occasioned some surprise.

There has been no improvement in demand. The market has been held back somewhat by the slowness of some leading independents in issuing prices. One big independent has been quietly soliciting business for the year based on the stipulation that its price will not at any time be higher than the P. & R. circular; in other instances the buyer is assured that it will not be more than 25c. higher at any time.

The hard coal situation in Baltimore is somewhat complex. Ordering is at a standstill, and dealers are sliding through with the smallest stocks possible to meet the spasmodic demand and are not ordering from the mines in any considerable quantity. Efforts to learn from the principal operators supplying this section just what prices at wholesale are to run over April and May, at least, have so far been futile. At the moment some independents with supplies of certain sizes on hand are making the rounds offering cuts considerably off the prices of the companies recognized as the regular suppliers of this section.

The anthracite season is over at Buffalo. Even the most active retailer is now about out of business unless he can find a family that is willing to put in its year's coal at the April price. That the shippers are anxious to get rid of some of the surplus that has troubled them lately is shown by their offering coal at the reduction ten days or so before the end of March. April prices of anthracite for Buffalo are about 50c. below the winter prices. Canada is making a special effort to get around regular anthracite by buying coke and then by shipping in a lot of Alberta lignite, on a freight rate said to be low enough to enable it to compete with Pennsylvania anthracite.

The fact that hard coal is held to be two high is shown also by the bringing over to Toronto this spring of a number of cargoes of Welsh coal.

The lake trade is active, three docks taking tonnage freely, with a dozen cargoes or more already loaded. The surplus coal appears to be considerable and a big fleet is expected to be ready to go by the middle of April, when the lakes probably will be open.

Trouble Subsides in Coke Region

Labor troubles last week at works in the Connellsville coke region where wages were reduced effective at the beginning of the week did not amount to much. Some production was lost, curtailing contract shipments, and on the advice of the operators the customers bought spot coke. Two valley interests bought byproduct coke in Youngstown to the extent of 175 cars between them and there was some buying of spot Connellsville coke, which sent the price up close to or quite to $3.50. The troubles have been subsiding and output is approximately back to normal, spot furnace coke thereby getting back to $3.25.

The story printed that contracts previously made for second quarter have been revised to $3.25 is positively denied by operators, who insist there has been no revision or request for revision. It is a fact, however, that some good brands of furnace coke can now be bought for second quarter at $3.25.

Spot foundry coke has been dull and has eased off a trifle, being now quotable at $4@$4.50 against $4@$4.75 a week ago.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended March 14, 1925	924,149	149,105
Previous week	930,009	163,531
Week ended March 15, 1924	916,953	170,554

	Surplus Cars		Car Shortage	
	All Cars	Coal Cars		
March 14, 1925	295,939	151,828	.....	.....
March 7, 1925	279,430	138,045	.....	.....
March 14, 1924	175,002	88,479	604	.....

Foreign Market And Export News

British Market Gloomy as Contracts Go To Rivals in Other Lands

The Welsh coal market continues to lose valuable orders, the **French State** Rys. having withdrawn their inquiry for 20,000 tons of smalls and 10,000 tons of large coals and purchased French coal instead. Two other orders which usually come to South Wales, each of 6,000 tons, also have been lost, one to the United States and the other to Germany. The Paris-Orleans Ry., which usually sends its own steamers to transport coal from South Wales, has intimated that it will not require Welsh coal for three months and intend using other coal instead. As shipments have averaged little over 400,000 tons per week recently, against the normal of 650,000 tons for the last two years, operators regard a large proportion of their trade as definitely lost. British collieries in general are overstocked and German and Belgian mines also are overproducing.

The great handicap in Wales is the increase in wages and the seven-hour day, and whenever Welsh coal comes into competition with either North English or German varieties, which are 7s. cheaper, the order is lost, unless Welsh coal is specified. France and Italy are both taking large supplies of German coal, and Italy is obtaining supplies from Russia. In these circumstances Wales is faced with more pit shutdowns.

Though 70 pits are closed and 32,000 men are out of work there is still more than enough coal in North England to meet the demand. Orders here also are being lost to Germany, though there are a few contracts up to 10,000 tons of gas coals. Several inquiries circulating in Newcastle from Europe have been withdrawn and the orders placed in Germany at several shillings below the lowest British figure.

Production by British collieries in the week ended March 14, a cable to *Coal Age* states, totaled 5,251,000 tons, according to official returns. This compares with an output of 5,186,000 tons in the preceding week.

Domestic Trade Tapers Off at Hampton Roads

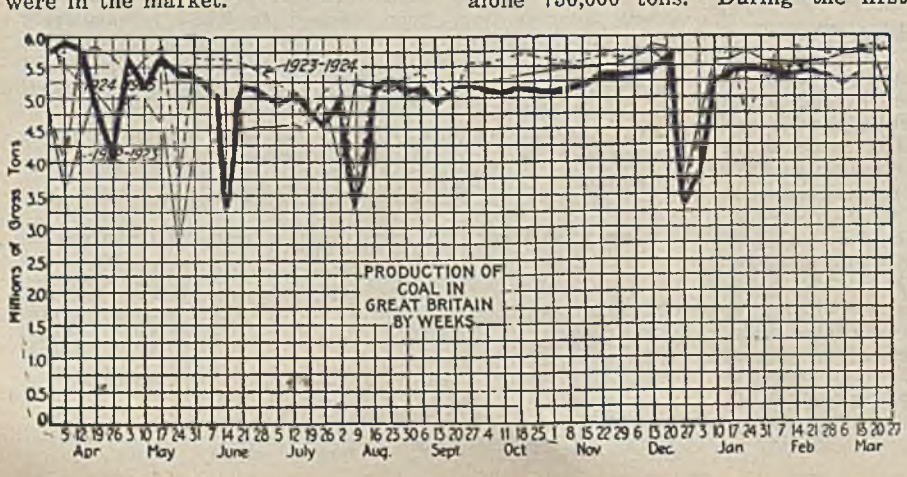
Hampton Roads business continued dull last week, with shippers reporting business in Western markets falling off, and with coastwise and bunker trades barely holding their own. Accumulations at tidewater were about normal, and some coal was being sold below market levels to forestall demurrage.

The Shipping Board bought 1,100 tons of pool 2 at $3.81, and other cargoes were offered at slightly higher levels. Domestic business was dropping off appreciably with the advent of warm weather, but some foreign business was moving, mostly to the South, and on old contracts. Comparatively few specifications for bids on April 1 contracts were in the market.

French Market Reflects Only Slight Change

In the French coal market the demand for house coals has increased somewhat because of a change in the temperature, but it came too late to have a far-reaching effect. Calm reigns on industrial grades. In consequence of the increase in home production and moderate demand, imports have suffered a decrease.

Deliveries of indemnity fuels in February from the Ruhr to the office des Houillères Sinistrées for France and Luxemburg included 320,700 tons of coal, 384,300 tons of coke and 42,600 tons of lignite briquets, a total of 747,600 tons, as against 763,600 tons in January. The Reparation Commission asked Germany to deliver to France alone 750,000 tons. During the first eleven days of March the O.R.C.A. received from the Ruhr 141,653 tons of coke, a daily average of 12,900 tons, which is well above the required quantity.



In 1924 Germany produced 119,000,000 tons of coal and 124,000,000 tons of lignite. This compares with 62,000,000 and 118,000,000 tons, respectively, produced in 1923.

Export Clearances, Week Ended March 28, 1925

FROM HAMPTON ROADS

	Tons
For French West Indies:	
Swed. Str. Befrost, for Fort de France	2,541
For Canal Zone:	
Amer. Barge Darien, for Cristobal	7,224
Amer. Str. Achilles, for Cristobal	12,019
For West Africa:	
Ital. Str. Enrichetta, for Dakar	6,947
For Danish West Indies:	
Nor. Str. Tricolor, for Curacao	5,828
For Italy:	
Ital. Str. Maria Enrica, for Porto Ferrajo	10,773
Ital. Str. Monte Nero, for Porto Ferrajo	6,874
For Argentina:	
Br. Str. Minnie de Larrinaga, for Puerto La Plata	6,974
For Brazil:	
Br. Str. Cabedello, for Pernambuco	4,107
For Spain:	
Jap. Str. Brazil Maru, for Gibraltar	7,735
Br. Str. Denham, for Barcelona	3,627

FROM PHILADELPHIA

For Cuba:	
Nor. Str. Thos. Haaland, for Havana	——
Nor. Str. Lisbeth, for Havana	——

FROM BALTIMORE

For Italy:	
Ital. Str. Attualita for Genoa	8,814
For Egypt:	
Fr. Str. Wesserling for Alexandria	6,727
For Canada:	
Am. Schr. Robert L. Bean for St. John, N. B.	1,917

Hampton Roads Pier Situation

N. & W. Piers, Lamberts Pt.:	March 19	March 26
Cars on hand	1,247	1,033
Tons on hand	77,581	67,577
Tons dumped for week	175,760	131,598
Tonnage waiting	10,000	10,000
Virginian Piers, Sewalls Pt.:		
Cars on hand	1,740	1,306
Tons on hand	116,350	91,260
Tons dumped for week	99,139	100,590
Tonnage waiting	10,049	8,450
C. & O. Piers, Newport News:		
Cars on hand	2,338	2,064
Tons on hand	117,840	115,240
Tons dumped for week	112,992	124,675
Tonnage waiting	9,000	2,535

Pier and Bunker Prices, Gross Tons

	March 21	March 28†
Pool 9, New York	$4.70@$4.95	$4.70@$4.95
Pool 10, New York	4.45@ 4.65	4.45@ 4.65
Pool 11, New York	4.25@ 4.50	4.25@ 4.50
Pool 9, Philadelphia	4.65@ 4.90	4.65@ 4.90
Pool 10, Philadelphia	4.30@ 4.55	4.30@ 4.55
Pool 11, Philadelphia	4.25@ 4.30	4.25@ 4.30
Pool 1, Hamp. Roads	4.10	*4.00*
Pool 2, Hamp. Roads	3.90	*3.85*
Pools 5-6-7, Hamp. Rds.	3.90	3.90
BUNKERS		
Pool 9, New York	$4.95@$5.20	$4.95@$5.20
Pool 10, New York	4.70@ 4.90	4.70@ 4.90
Pool 11, New York	4.50@ 4.75	4.50@ 4.75
Pool 9, Philadelphia	4.80@ 5.10	4.80@ 5.10
Pool 10, Philadelphia	4.60@ 4.75	4.60@ 4.75
Pool 11, Philadelphia	4.45@ 4.65	4.45@ 4.65
Pool 1, Hamp. Roads	4.20	*4.10*
Pool 2, Hamp. Roads	4.00	4.00
Pools 5-6-7, Hamp. Rds.	4.00	4.00

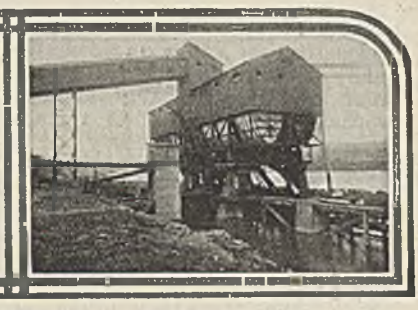
Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

Cardiff:	March 21	March 28†
Admiralty, large	26s.@27s.	**27s.**
Steam smalls	15s.6d.	**15s.6d@16s.**
Newcastle:		
Best steams	17s.9d.@18s.6d.	*17s.3d.*
Best gas	20s.	20s.
Best Bunkers	18s.6d.	*18s.@18s.6d.*

† Advances over previous week shown in **heavy** type declines in *italics.*

News Items From Field and Trade



ALABAMA

The Gulf States Steel Co., Brown-Marx Bldg., Birmingham, is reported to have purchased 85,000 acres of coal land from the Bessemer Coal, Iron & Land Co., of Birmingham, and the Friedman interests, in Tuscaloosa and Fayette counties.

The Franklin Coal Mining Co. has added a new 400-ton unit to its washery at Powhattan No. 2 Mine, and with its washery at No. 1 now has a capacity of 1,750 tons of washed coal per day. The company also will install at No. 2 mine an electric locomotive and new larry to handle washer refuse at this operation. The company maintains its headquarters in Birmingham.

COLORADO

The Bear River Coal Co. operating mines in Routt County, has passed into the hands of the Fraker Coal Co. The Fraker Coal Co., with George E. Fraker, president, and the Bear River Sales Co., with W. T. Mayfield president, are exclusive distributors of Bear River coal. F. C. Craig is made general sales manager of the Bear River Sales Co., with headquarters in the Insurance Building, Denver.

Colorado production for January and February showed an increase of 67,333 tons over the same two months of 1924. The February, 1925, totals showed that nine counties surpassed January and twelve fell back slightly. The general wage reduction of 20 per cent throughout the state, to take effect in most mines April 16 and 17, is expected to give the state better spring and summer running time than would have been the case under the old wages.

Some of the county assessors in Colorado have a hard time evaluating coal lands. The county boards of the state, in annual convention at Denver March 6, passed a resolution requesting the Legislature to make an appropriation for an expert evaluation by the state tax commissioners' department.

ILLINOIS

The striking miners at the new Nason mine of the Illinois Coal Corporation went back to work Friday, March 13, to continue work on the existing wage contract without change. Each man was penalized $11 by the company for striking nine days—$3 for the first day and $1 a day thereafter—in violation of contract. An effort had been under way to formulate by commission a wage scale for working the mine on the conveyor system which the company is installing. The commission composed of miners' and employers' representatives, went home as soon as the illegal strike started and has not reconvened since. So no scale has been proposed yet.

The Big Four Railroad has made no move to comply with the Interstate Commerce Commission's order to build a connection between its main line and the J. K. Dering Coal Co. mine at Eldorado. The railroad objected vigorously to making the connection even after the coal company had built, at the Big Four's written suggestion, a track 2.5 miles long from the mine across lines of the Illinois Central and the Southern Illinois Railway & Power Co. to the Big Four right of way. The Big Four originally believed that the coal company would not tackle the herculean job of constructing a line across the two other railroads. Now that the line is built, the Big Four objects to connecting it, fearing that it will soon be operated by the coal company as a public carrier, thus giving the Illinois Central and possibly the electric line access to certain coal acreages now served solely by the Big Four. The Big Four may ask the Interstate Commerce Commission for a rehearing of the case, or appeal to the federal court for relief from the commission's order.

INDIANA

Excellent Coal Co., Linton, has filed a certificate of final dissolution.

The American No. 1. mine, largest of the mines in the Knox County field, will be operated throughout the entire year, according to official information. About 1,000 men are employed at the mine, many of whom live in Vincennes. The American No. 1 once held the world's record for hoisting coal. It is the third largest today. The two mines which hold larger hoisting records beat it by a small margin. Each has double the hoisting apparatus of the Knox County mine. The outlook for the summer is considerably brighter than last year.

An involuntary petition has been filed against Ethel M. Ragan, doing business as the Ragan Coal Co., 510 Traction Terminal Building, Indianapolis, by W. H. Warner & Co., of Cleveland, the Ogle Coal Co., and the Consolidated Collieries Co., both of Indianapolis, alleging payment of preferred creditors while insolvent.

KANSAS

The Pittsburg Chamber of Commerce has voted to put the slogan "Use Kansas Coal" on all its stationery and urge all members to similarly use it as part of a campaign to promote business for the mines of the district. This is specially directed toward presenting the claims of Kansas coal to the attention of Kansas City jobbers, from whom the Pittsburg merchants do a large part of their buying.

Non-working members of District 14, United Mine Workers, will have to go without any assistance from a special assessment on their more fortunate fellows, as the result of a recent ballot, by which the proposal of an assessment was defeated by 156 votes. The proposal of an assessment of 25c. a day for every day worked was made soon after the miners of Sheridan mines Nos. 7 and 18, operated under lease respectively by the Eastern Coal Co. and the Capital Coal Co., quit work March 1, following announcement by the lessees that on that date the mines would revert to the 1917 wage scale.

KENTUCKY

It was reported from Whitesburg on March 20 that the Elkhorn Colleries Co., has reduced wages 10 per cent and started full-time production on a long-time basis.

The Edgewater Coal Co., at Henry Clay, on Marrow Bone Creek, suffered a $35,000 fire loss on March 19, when several of its town buildings were burned.

One of the most favorable reports ever made by a tax equalization board in Kentucky was that rendered by the Pike County Board on March 17, showing that general assessment for the county had been reduced $1,500,000, but increased $1,000,000 on property not listed, showing a total of $29,000,000. Resolutions were adopted in which it was stated that valuations of coal properties were put in at considerably over cash sale values, in view of the fact that there has been a depreciation of 50 per cent in coal properties. It was explained that the coal trade is "practically paralyzed," and to make this statement clear it was shown that sixteen coal companies in the county have been in bankruptcy or receivership, that many other plants were down, and that many of these will not resume unless there is considerable improvement in demand and prices.

Early in March the commissary, office and a portion of the coal tipple of the Kanawha-Knox Coal Co., at Barbourville, was destroyed by fire.

The Winchester Coal Co., of Emma, plans a novel change in its aerial coal conveyor. At present there is a 700-ft. cableway on which are operated two

buckets of 1½ tons each, carrying the coal across the valley and over the Big Sandy River to the railroad tipple. In order to reduce breakage and cut the overhead it is planned to replace the buckets by cages and carry the 1½-ton capacity mine cars over to the railroad. This will necessitate moving the picking table from its present location to the railroad tipple, and strengthening the aerial cable and structure to support the greater weight.

Very little is being heard of the Western Kentucky coal miners' strike in District 23, as a result of no effort to operate mines that are down, and the fact that mines that have broken the strike, or which were not involved, are operating on short time and with short forces due to lack of market. The strike will be a year old on April 16.

The Chesapeake & Ohio R.R. has started work on its million dollar improvements to yards and equipment at Russell, a big division point on the road for handling coal in the eastern Kentucky and West Virginia sections.

The Imperial Elkhorn Coal Co., has leased additional coal lands near Sergent, and will increase its daily capacity to 1,000 tons.

The Harlan Coal & Coke Co., at Ridgeway, was sold at a receiver's sale following an order from the federal court. The mine equipment and lease was bid in by F. C. Mahan for $6,000, about 40 per cent of the real value of the mine. Depression in this field was given as the cause of failure of the company.

The Detroit Edison Co. is reported from Harlan to have sold its 2,000-ton-per-day mine, known as the White Star Coal Co. mine, to the Melcroft Coal Co., controlled by Secretary Mellon, of the U. S. Treasury. The Melcroft Coal Co. has a large plant at Coxton, in the Harlan field.

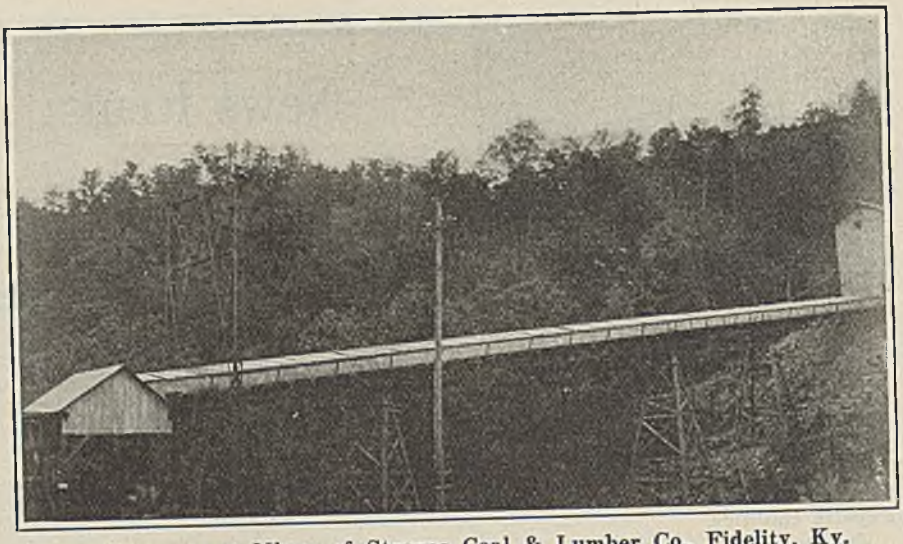
The Elkhorn Collieries Co., at Bastin, recently lost its tipple, power house and other equipment in a $125,000 blaze, which will put the plant out of commission for some weeks.

MICHIGAN

The People's Coal Mining Co., of Albion, has been reorganized as the Southern Michigan Coal Co., capitalized at $35,000, and will file incorporation papers. Officers of the new company are: President, James J. Keeley, of Jackson; vice-president, Fred J. Herrick, Albion; secretary-treasurer and general manager, H. W. Luce, Albion; directors, George E. Dean, Albion and L. A. Page, Marshall. Operation of the company's mine will be resumed at once.

NEW YORK

The Buffalo school board opened the bids March 26 to furnish 20,000 tons of semi-bituminous, otherwise called smokeless coal. There were twelve bids, ranging from $6.98 down to $5.14 delivered, the firm of E. L. Hedstrom being apparently lowest. The board took no action and will do considerable figuring before a decision is made. As there was considerable feeling developed over the award of this contract last year the board will proceed with caution.



Conveyor at Mines of Stearns Coal & Lumber Co., Fidelity, Ky.

A heavy trestle is saved by the use of a conveyor. Had the cars been run over this ravine both the substructure and the roadway would have been heavy. The conveyor is not only an economical form of transportation but affords a saving in construction.

Announcement has been made of the appointment of a chairman to cover the retail coal division in the forthcoming home service appeal for the Salvation Army in Greater New York. George Eltz, president of the Coal Merchants' Association, 90 West street, will be responsible for solicitation in the retail coal section, and is now at work completing his committees and planning their work. This year the budget calls for $523,343, to be used in financing the work of 47 institutions throughout the greater city. The appeal will be before the public during the month of May, under the general chairmanship of David H. Knott, former Sheriff, and aided by Henry W. Taft, president of the permanent advisory board.

OHIO

At a meeting of the Logan subdistrict of the miners' union held recently a resolution was adopted condemning the practice of miners operating mines on the co-operative plan. Strong talks were made by certain officials and it was decided that the union auditors should be permitted to examine the books of such companies to ascertain if they are operating at union wages. No steps were taken to expel the members so operating, however, as it was believed that they could be chastened better within the union ranks. Reports showed that about 35 small mines are being operated on the co-operative basis and each employs from 5 to 20 miners. Production of lump averages about 75 cars a day.

Producers and distributors in Ohio have received inquiries from the New York Central System asking for bids on an indeterminate tonnage of railroad fuel. The specifications provide for bituminous mine run, all bids to be accompanied by an analysis. The period covered extends from the time of accepting the bid to March 31, 1926 and each bidder is given the privilege of bidding on as large a tonnage as he desires. The price is to be subject to changes in the union mining rate if any are made during the life of the contracts.

The Harman-Burton Coal Co., organized several months ago to develop a tract of 2,500 acres of virgin coal lands on the Muskingum River, opposite the site of the new power plant at Philo, will soon start its development work. William S. Harman, vice-president and general manager, is working on the plans, which call for stripping as the first step. To accomplish this work several large steam shovels as well as screens and other equipment will be installed. The coal will be used largely to supply the $8,000,000 power plant, which is completed, with several units in operation. R. C. Burton, of Zanesville, is president of the new coal company.

PENNSYLVANIA

F. J. Lemoyne, vice-president in charge of finances, was elected to the additional office of treasurer by the directors of the Pittsburgh Coal Co. March 25. He succeeded as treasurer A. F. Fell, whose retirement was announced. Other officers re-elected included W. G. Warden, chairman of the board, and W. K. Field as president of the company.

Three miners were drowned and a dozen others narrowly escaped a similar fate March 24 when a dynamite blast in an abandoned gangway of the Vulcan Mine of the Lehigh Valley Coal Co., at Mahanoy City released thousands of gallons of water which had accumulated behind a wall of rock, unknown to the miners who were working in an adjoining section.

The Penn Public Service Corporation, with big operations at Seward, has installed complete equipment for rock-dusting. Last week, in their No. 5 mine at Seward, a practical demonstration of rock dusting was given which owners throughout western Pennsyl-

vania viewed with interest. Operators were present also from Somerset, Westmoreland, Indiana and Centre counties, in the central Pennsylvania field. It is likely that practically all the big operations in the state will shortly install similar equipment.

The Pittsburgh Coal Co. has declared the regular quarterly dividend of 1½ per cent on the preferred stock, payable April 25 to stock of record April 10. At the annual meeting of stockholders, March 25, W. P. Snyder, Jr., was elected to the board of directors to take the place of the late J. C. Dysart. Other members of the board were re-elected.

The labor troubles caused by the wage reduction in the Connellsville coke region seem to be ironing themselves out. More men are daily returning to work at the affected plants and it is expected that by the end of the week they will be about back to normal.

The State Senate on March 23 passed at second reading the bill which would repeal the anthracite tax. On the following day, however, the House Ways and Means Committee voted to negative the bill.

Engineers of the Pennsylvania Power & Light Co. are busy plotting the extension of high-tension lines to Black Ridge, where the Blair-Allen Coal Co. has acquired the old workings of the Black Ridge district operated by the Wentzes and the McTurks years ago, but abandoned as supposedly worked out. The electrification of the entire operation is planned by the new owners. There is a lot of coal in outcrops and also some in the workings. The mines will be reopened, with stripping the feature of the activities.

The Buck Run Coal Co., which has been drilling in the vicinity of Marlin and Minersville for the past year or more for the purpose of proving the veins of coal lying in this tract, has completed the work. The land, which was owned by the Kemmerling Estate, and leased by the Lehigh Valley, has been taken over by the Buck Run interests and some big improvements are expected. It is understood that a breaker will be built near Minersville on the Philadelphia & Reading R.R. All interests holding leases form the Kemmerling company have been notified that these will be transferred to the new owners.

TENNESSEE

According to a press announcement from Chattanooga, a syndicate of Atlanta men, represented by A. L. Jacobs, has acquired 4,000 acres of coal lands on Raccoon Mountain at a cost of $100,000. It is stated that the property will be developed and the output used in Atlanta.

W. D. Fuller, of Hillsboro road, Nashville, is reported to have purchased the property of the Memphis Coal Mining Co., near Hopkinsville.

TEXAS

The Texas Pacific Coal & Oil Co. reports gross earnings of $5,080,915 for 1924, against $5,625,307 in 1923. After deducting operating and general expenses, crediting other income and allowing for depreciation and depletion reserves, this was a net income of $32,665 for the year. In 1923 the company reported a loss of $279,238.

UTAH

The United States Attorney has asked a rehearing in the fraud case against George A. Storrs, Joseph S. Welch, Charles M. Croft and Earl J. Welch. The indictment against them was abated recently by Judge Tillman D. Johnson at Salt Lake City. The rehearing is asked on the proceedings by which the indictment was set aside.

R. M. Magraw, general superintendent of the United States Fuel Co. properties, has returned to his home at Hiawatha, much improved in health after two months of recuperation spent principally in his old home country in Maryland.

Twelve men are suing the Independent Coal & Coke Co. for sums approximating $475 each on the ground that they worked through the 1922 strike for the company at 63.5c. an hour with the understanding they would be paid retroactively if wages were raised at the end of the strike. Although the complainants claim that their wages went up to 93.5c. an hour at the end of the strike they assert they never got their back pay.

Geo. S. Rice, chief engineer, U. S. Bureau of Mines, and J. H. Paul, chief coal mining engineer of the bureau, have made an inspection of the Utah Coal Mines. They expressed considerable satisfaction at the rock-dusting and watering processes in use at the mines. B. W. Dyer, district engineer of the bureau, stationed at Salt Lake City, accompanied them, as did a number of coal company officials.

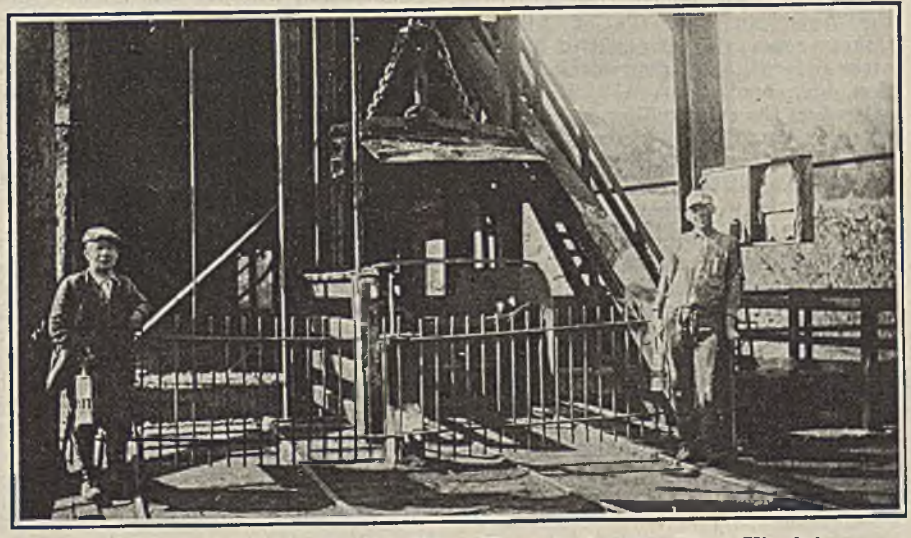
Coal output in Utah in February was but 300,640 tons, 9,210 tons less than February last year, which set up a new low record for that month. January this year, however, broke the record for a heavy production. The explanation for the sudden falling off is, that the coal business was unusually brisk in January on account of the below-zero weather that came at the end of December. Considerable coal was purchased, but the weather broke suddenly and supplies were stored.

The legislative committee investigating the activities of the State Securities Commission condemned the action of its secretary in giving the Great Western Coal Mines Co. a letter of commendation. The letter was used in stock selling. This letter was declared to have been "at least unethical." It was held that the association of the name of Jack Dempsey, boxing champion, and his manager, Kearns, was merely for the purpose of encouraging investors to purchase stock. It was declared Dempsey and Kearns never purchased the stock promised.

The U. S. Supreme Court has denied the request of Nicholas J. Curtis, Salt Lake City, who sought a writ of mandate directing Judge Tillman D. Johnson of the federal court here to appoint "an impartial federal judge" to conduct hearings of his suit against the Utah Fuel Co. for $50,000 for character damages. The man claims that he was ousted from the University of Utah law school when he complained to the Attorney General that the coal company was defeating the administration of law, including the draft act during the war.

VIRGINIA

The Consolidation Coal Co.'s annual report, issued March 18, shows a decrease of $1,523,806 in the grand total carried as profit and loss account, insurance fund surplus and capital surplus, this being $87,800,386 as of Dec. 31, 1924, compared with $89,324,192 on the corresponding 1923 date. Net loss from operations was $1,387,723, operating expenses, taxes, insurance, royalties, depreciation and depletion amounting to $20,650,907, against operation earnings of $19,263,183. The net deficit for the year after cash dividends on both preferred and common stocks was $4,969,405. Capital assets as of Dec. 31 last were listed at $196,383,041, gross value, and $153,633,444, net value. Current assets are listed at $184,852,998. Outstanding common was $40,205,448



Shaft Landing, Summerlee Mine, Fayette County, West Virginia

Firebosses have just completed their inspection of the workings for gas The mine operates the Sewell bed which is here 4 ft. 6 in. to 5 ft. 6 in thick

and preferred $10,000,000, together with $3,933,100 Carter Coal Co. 6 per cent outstanding preferred. Funded debt outstanding in hands of the public was reported at $30,457,329, exclusive of bonds in the treasury, according to President C. W. Watson. During 1924 the company mined 7,957,810 tons, lessees mined 2,117,612, a total for the year of 10,075,068 tons. Total production since 1864 was 259,236,477 net tons.

WASHINGTON

The new Black Jewel Coal Co. has leased the 120-acre Castle Rock Coal Co. property near Castle Rock and expects to operate.

WEST VIRGINIA

The recent explosion at the Barrackville mine in Marion County, makes the proposed revision of the West Virginia mining law as incorporated in House Bill 441, introduced by Delegate Tutwiler, of Fayette County, of peculiar interest and will, there is reason to believe, give impetus to the favorable consideration of the measure, since the blil deals largely with the question of adequate ventilation and an increase in the mining inspection force.

The Bunker Coal Co., of Scotts Run, was sold the second week in March to the Warner interests of Cleveland. It is stated the price paid will aggregate approximately $335,000, or $1,250 an acre for 268 acres. With the sale of the acreage, of course, go surface rights and tipple equipment and it is understood that miners' houses also are a part of the transaction. The deal was consummated in Pittsburgh where the general offices of the Bunker Coal Co. are located. The principal stockholders are Pittsburgh men with W. C. Atwood as president. The Bunker mine is rated as one of the best small plants in the Scotts Run section. It was opened about 1921 by Mr. Atwood and his associates and has operated almost continuously since that time.

West Virginia produced 110,000,000 tons of bituminous coal in 1924, or 22.76 per cent of the output of the whole United States, which aggregated 483,280,000 tons. In 1921 the state mined 72,787,000 tons; in 1922, 80,488,000 tons and in 1923, 107,900,000 tons. While the output of the West Virginia mines has been growing each year, the railroads serving the state have expanded in order to take care of its transportation. In 1924 there were no complaints of car shortage, and West Virginia produced the greatest quantity of coal in its history.

The Winding Gulf Colliery Co., headed by Justus Collins, has been awarded a verdict of $115,000 in its suit in the Raleigh Circuit Court against Prince E. Lilly and John Hornbrook, the verdict, given under instructions of the court, being the amount sued for and covering notes given for the purchase price of a lease on mining property to be developed by the defendants. It was developed during the trial that $63,000 had been paid on the purchase price of the lease. In a cross suit the defendants sought the recovery of the $63,000 and also a surrender of the lease, contending that the deposits of coal had not turned out as represented.

The large Highland mine of the Consolidation Coal Co., located on the Baltimore & Ohio between Fairmont and Clarksburg, has been closed down for an indefinite period, according to announcement made by F. R. Lyon, vice-president of the company. The Highland mine, under normal conditions employs about 400 men. Recently the mine has been operating about four days a week. The mine has a capacity of about 35 cars of coal a day. The Highland mine as well as other plants of the company in the Fairmont region has been operated under the Jacksonville agreement. Out of 28 mines in the Fairmont region, the Consolidation has only seven in operation.

January output of low-volatile coal totaled 4,260,644 tons, compared with 3,284,857 tons in January, 1924, all districts showing an increase. The increase in the Pocahontas field amounted to 245,380 tons; in the New River field to 428,409 tons; in the Winding Gulf region to 160,443 tons and in the Tug River field to 141,555 tons. The Norfolk & Western hauled 2,403,435 tons, the Chesapeake & Ohio 1,164,290 tons and the Virginian 692,919 tons.

The stockholders of the Roderfield Pocahontas Coal Co. at a recent meeting at Welch completed arrangements for the immediate installation of a plant at Roderfield. Contracts have been let for the construction of a modern four track tipple, equipped with shaker screens. The following officers of the company have been elected: J. W. Strickler, president; O. E. Linkous, vice president; R. L. Paige, secretary and treasurer. The above officers together with Henry Rawlie, of New York, and J. B. Henderson of Lynchburg, Va., constitute the board of directors. It is the intention of the company to install modern electrical equipment. The plant of the company will be located on the property of the Spice Creek Land Co., which has been leased to the Roderfield company.

For the year ended Dec. 31, 1924, the American Coal Co. of Allegany County reports a net profit of $244,001 after federal taxes, depreciation, depletion, etc., equivalent to $4.91 a share earned on the outstanding 49,598 shares of stock, par $25. This compares with $915,852 before federal taxes, or $18.46 a share, in 1923.

WYOMING

D. F. Patterson, state coal mine inspector for the southern district of Wyoming, has resigned, effective April 1. He lives at Rock Springs.

CANADA

In order to encourage the establishment and operation of modern coking plants in Canada, the Dominion government has allowed a drawback of 99 per cent of the duty levied on imports of bituminous coal converted into coke. Coking plants have been using slack and the recent increase of the duty would have placed them at a considerable disadvantage in competition with coke which is brought in free of duty. Provision is made, however, that no drawback is payable during any month when the average ratio is less than 1,300 lb. of coke to 2,000 lb. of coal.

Operations by a Fernie syndicate to prove the coal areas near Qualicum Beach, Vancouver Island, will be initiated immediately, it is announced. For many years it has been known that coal existed in that section in apparently large quantities, but so far little effort has been made to develop the area, the larger coal-mining concerns in the vicinity of Nanaimo and Cumberland, adjacent to the Qualicum area, having devoted their energies to developing their own properties. Just before the war attention was directed to the Qualicum section but the outbreak of hostilities interfered with further work.

Premier Ferguson told the Legislature March 24 that the transportation of 100,000 tons of bituminous coal by rail from Alberta to Ontario would be undertaken in May. The shipment of Alberta coal to Ontario for sale at prices to compete with anthracite from the United States has hitherto been impossible because of high freight rates. Reductions have been made, however, and the transportation of 100,000 tons from the West this summer will be carried out as an experiment.

Traffic

Oral Hearing on New Lake Rates Set for April 27

Information from Washington is to the effect that the Interstate Commerce Commission has granted an extension of time for filing exceptions to the proposed changes in lake cargo coal rates. It is stated that exceptions may be filed up to April 6 and answers to the exceptions up until April 20. Oral arguments will be heard in Washingston on April 27 and 28. West Virginia operators assert that the examiners' report, if approved by the commission, will put into effect a new schedule of rates on coal shipped from West Virginia and Kentucky fields which will double the present differential between these mines and those in the Pennsylvania and Ohio fields.

New Kentucky Rate to Northwest Takes Effect

The 54c. increase in all-rail freights on Kentucky and West Virginia coal to the Twin Cities became effective March 23, becoming $5.40 in place of $4.86. It involves changes to many Minnesota and Dakota points of varying amounts up to $1. To some few points which have heretofore had rates only as the sum of the locals, the joint rate works a reduction. Most of the all-rail West Virginia coal to the Twin Cities came on rates totalling $5.70 and they get a 30c. reduction. The Pocahontas and New River districts have shipped on a rate that becomes reduced 35c. under the new combination.

New Companies

The Chambers Coal Co., Cleveland, Ohio, has been chartered with an authorized capital of $100,000 to mine coal and sell coal and coke. Incorporators are J. H. Kellogg, E. Harper, I. W. Sharp, N. B. Wilson and A. M. Berghoff.

The Canadian Coal & Clay Products, Ltd., has been organized in Ottawa for the manufacture and sale or pressed coal briquets and has been granted a Dominion Charter with a capital of $50,000.

The Turkey Foot Coal Co., Louisville, Ky., capital $10,000, was incorporated late in February by Robert Jameson, Joseph Harris and others.

The Johnstone-Mankin Coal Co. has been organized and incorporated at Jasper, Walker County, Ala., with a capital of $15,000 paid in, and will engage in general coal mining business. J. M. Johnstone, W. H. Moore and I. F. Mankin are named as incorporators.

The Sterns Coal Co. was incorporated in Louisville, Ky., the early part of March, with a capital stock of $40,000, by J. S. Sterns and W. T. Culver.

The Coosa River Fuel Co. was incorporated in Gadsden, Ala., the last part of February by J. R. Alves and M. B. Wood.

Coming Meetings

Upper Potomac Coal Association. Annual meeting April 6, Cumberland, Md. Secretary, J. F. Palmer, Cumberland, Md.

Canadian Retail Coal Association. Annual convention, King Edward Hotel, Toronto, Ont., Can., April 8 and 9. Secretary, Bert A. Caspell, Brantford, Can.

National Retail Coal Merchants Association. Annual convention Traymore Hotel, Atlantic City, N. J., May 11-14. Resident vice president, Joseph E. O'Toole, Transportation Bldg., Washington, D. C.

The American Society of Mechanical Engineers. Spring meeting, May 18-21, Milwaukee, Wis. Secretary, C. W. Rice, 29 West 39th St., New York City.

Mine Inspectors' Institute of America. Annual convention, Jefferson Hotel, Peoria, Ill., May 19 and 20. Secretary, G. B. Butterfield, 179 Allyn St., Hartford, Conn.

Chamber of Commerce of U. S. A. Thirteenth annual meeting, May 20-22, Washington, D. C.

Manufacturers' Division of the American Mining Congress. National exposition of coal-mining equipment, Cincinnati, Ohio, week of May 25. Secretary of American Mining Congress, J. F. Callbreath, Munsey Building, Washington, D. C.

National Association of Purchasing Agents. Tenth annual convention, Milwaukee, Wis., May 25-28. Secretary, W. L. Chandler, Woolworth Building, New York City.

American Wholesale Coal Association. Ninth annual convention, French Lick Springs Hotel, French Lick, Ind., June 1 and 2. Secretary, G. H. Merryweather, 1121 Chicago Temple Bldg., Chicago, Ill.

Illinois & Wisconsin Retail Coal Dealers' Association. Annual meeting, June 9-11, at Lake Delavan, Wis. Secretary, I. L. Runyan, Great Northern Bldg., Chicago, Ill.

Mid-West Retail Coal Association. Annual meeting at Kansas City the first half of June. The exact date will be decided upon soon.

National Coal Association. Annual meeting, June 17-19, Edgewater Beach Hotel, Chicago, Ill. Executive Secretary, Harry L. Gandy, Washington, D. C.

American Society for Testing Materials. Twenty-eighth annual meeting, week of June 22, Chalfonte-Haddon Hall, Atlantic City, N. J. Secretary-treasurer, C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

Chemical Equipment Exposition. June 22-27, Providence, R. I. Association of Chemical Equipment Manufacturers, 1328 Broadway, New York City.

Tenth Exposition of Chemical Industries, Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

Fourth National Exposition of Power and Mechanical Engineering, Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

Coal Mining Institute of America. Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 504, Ebensburg, Pa.

New Equipment

Flywheel Synchronous Motors For Air Compressors

The application of direct-connected synchronous motors to air compressors of large capacity has been so successful that motor manufacturers have been moved to develop synchronous motors for driving compressors of small size.

Until recently the small direct-connected motor was at a great disadvantage in competing with belted induction motors owing to its higher first cost. This handicap was largely due to the weight per horsepower of the synchronous motor, which increased rapidly in the smaller sizes.

Standard construction of synchronous motors necessitates large diameters for slow-speed ratings such as are encountered in air-compressor operation. This is due to the fact that pole space must not be too crowded and that a certain degree of flywheel effect is required, which must, of necessity, be concentrated in the rotor, resulting in unusually heavy bearing pressures because of the weight necessary at a small radius to give the required effect. This makes it undesirable to mount the rotor near the end of the shaft as in the case of a center-crank compressor, without resort to an outboard bearing.

Rotator Outside of Stator

To overcome the disadvantages of the present general construction a line of synchronous motors has been designed known as the flywheel type. These are especially adapted to single straight-line air-compressor operation. This motor is designed with the rotating element outside the stator. The stator is mounted in a cradle support bolted to the compressor frame. This cradle is bored concentric with the compressor bearing to assure perfect alignment of the stator and a uniform air gap when assembled. The rotor presents the appearance of an ordinary flywheel. Its face is crowned for driving an exciter or other auxiliary and on the inner surface of the rim are mounted the poles, adding more flywheel effect, of which there is an abundance.

The air gap in this motor is relatively small and the way in which the uniformity of that gap can be maintained naturally arouses interest. This has been met by designing the stator so that the magnetic pull is upward, relieving the bearings of excessive downward pressure and giving, in effect, a floating rotor. In addition the main bearings of the compressor are fitted with removable die-cast bushings which may be quickly and cheaply replaced at the first sign of wear. With these precautions the air gap may be expected to give but little trouble.

Cost and Weight Reduced

With such construction the weight and consequently the cost of the motor have been greatly reduced; sufficient flywheel effect for smooth operation has been obtained; a uniform, correct air gap has been provided; foundation expense has been reduced, and because of the simplicity of construction and the machined assembly parts, erection costs and repairs are reduced to a minimum. The floor space required to accommodate a machine so equipped is even less than if belted to a line shaft, whereas the costs of the two types of electric drive are practically the same.

Chicago Pneumatic direct-connected compressor units with this type motor are now available in sizes ranging from 139 to 1,000 cu.ft. displacement, for 100-lb. discharge pressure up to 125 lb.

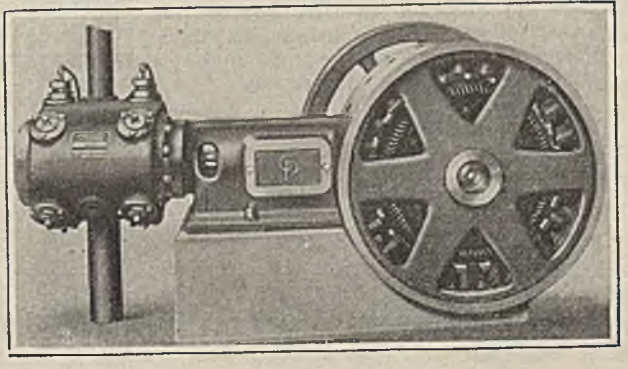
New Wire Rope for Mine Use

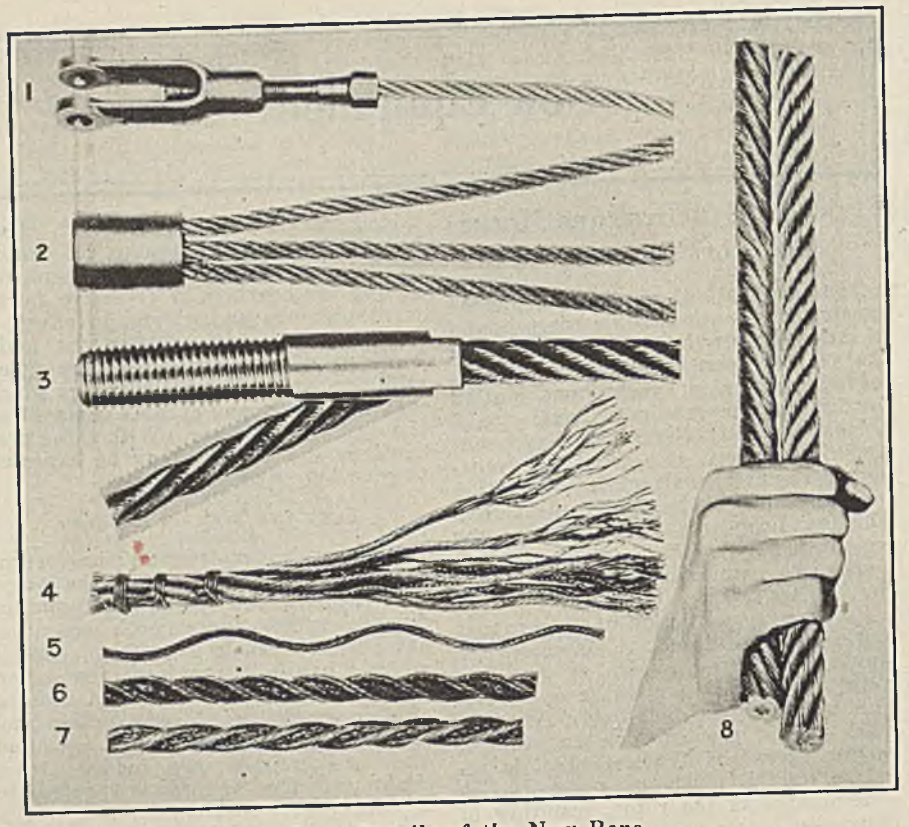
Engineers confronted with mine hoisting and haulage problems will be interested in a new wire rope, known as Tru-lay, its construction being basically different from that used in previous methods of manufacture. The new principle applied in the manufacture of this rope by the American Cable Co., of New York City, is that of "preforming" the wires and strands to the exact shape they must assume to fit correctly in the completed product. It is being made in both Lang and regular lays in diameters up to 1 in. and has shown excellent performance under exacting and severe tests.

An important characteristic of the Tru-lay rope is said to be that it resists unstranding. It can be cut at any point for splicing or other treatment and handled without the necessity of seizing. Exhaustive tests show that it

Built-In Motor

In this machine the driving motor actually is built into the compressor flywheel, the rotor surrounding the stator.





Some Details of the New Rope

How various fittings may be attached or "flowed" onto the ends of Tru-lay ropes is shown in Figs. 1, 2 and 3. Fig. 4 shows an ordinary rope with the end unseized. Both the rope and its strands tend to unravel. A detached strand of the new rope, which evinces no tendency whatever to untwist, is seen in Fig. 5. Figs. 6 and 7 show pieces of the new rope in regular and Lang lays from which every other strand has been removed. The strands remaining do not tend to come apart. Two short pieces of the new rope are shown in Fig. 8. Although unseized these pieces do not fray out with handling.

has an appreciably longer life than ordinary rope when subjected to bending stresses. This is an important asset where winding over sheaves and drums forms the chief cause of rope wear.

It is claimed that the preforming of the wires and strands in the rope results in an even balancing of the load on the separate strands as well as a remarkably uniform load distribution to individual wires. The rope is said to show no tendency toward high stranding in actual use and to withstand satisfactorily winding tests under heavy loads.

Outer Wires Do Not Fray

Broken wires in this new rope lie flat in place. In mining operations broken outer wires on cables, resulting from long wear or abrasion, cause considerable trouble, and often necessitate the renewal of the rope before it actually should be discarded. The outer wires of the Tru-lay rope, it is said, show no tendency to fray out of the rope body. They continue in their places, thus lessening the wear on other wires and on sheaves and drums.

The fact that the rope does not unstrand makes splicing a comparatively simple operation, yet it is stated that the new rope has been found to satisfy all the canons of safety. Users have long recognized that Lang-lay rope possesses definite advantages over that of regular lay for certain sheave and drum work. Though 80 per cent of the mine cable used in England and Europe is Lang-lay, it has been little employed in the United States because of the difficulty encountered in splicing and handling. The preformed construction of Tru-lay rope is designed to meet this difficulty, making possible use of Lang-lay cable wherever desired.

To make available practically the entire strength of the new rope, its manufacturer has developed a special steel fitting, used without zinc, called Tru-loc. This has not only proved dependable under ordinary conditions but also permits the use of turnbuckles, shackles and other equipment usually employed only with rods and chains.

A steel sleeve is slipped over the smooth unseized end of the rope, placed in a specially designed press, and made to "flow" until it grips both wires and strands. These sleeves may be of any reasonable length, can be threaded, or equipped with heads of various types for the reception of wrenches, or furnished with eyes or hooks. This fitting is lighter, less bulky and has proved more dependable than the old-style zinc socket, probably because of the more perfect equalization of the load on wires and strands.

Publications Received

Employees' Representation in Coal Mines, by Ben M. Selekman and Mary Van Kleeck. Russell Sage Foundation, New York, N. Y. Pp. 454; 5½x8 in.; tables and map. Price, $2. A study of the industrial representation plan of the Colorado Fuel & Iron Co.

Employees' Representation in Steel Works, by Ben M. Selekman. Russell Sage Foundation, New York, N. Y. Pp. 293; 5½x8 in.; tables. Price, $1.50. A study of the industrial representation plan of the Minnequa Works of the Colorado Fuel & Iron Co.

Association Activities

The Anthracite Coal Operators' Association, meeting in Philadelphia March 10, re-elected its president, Percy C. Madeira, who has been head of the association since it was organized by independent hard-coal operators in 1917. The following officers also were re-elected: Alan C. Dodson, A. B. Jessup and John C. Haddock, vice-presidents; Alan C. Dodson, S. B. Thorne, J. L. Kemmerer, W. T. Payne, F. E. Zerbey, George F. Lee, J. W. Crooks and J. C. Haddock, directors.

Industrial Notes

The Electric Storage Battery Co., Philadelphia, announces that it will erect a factory branch in Boston on Ashford street, near Babcock. The site was purchased a few days ago. The new structure which will cover approximately 35,000 sq.ft. will consist of a two-story office fronting on Ashford street, with a one-story manufacturing establishment in the rear. The new building will be laid out along the lines of the latest developments in the main factory at Philadelphia. It will be of modern daylight construction and equipment will be modern in every respect. This will be the fifth new factory branch building erected by the company within the last two years.

The Trico Fuse Mfg. Co., of Milwaukee, Wis., has introduced a new line of fully approved non-renewable cartridge fuses. The new line, which is built in all standard sizes from 0 to 600 Amp. and fully approved in both the 250 and 600 voltages, is known as the Trico "Kantark" non-renewable fuse. This company is a pioneer in powder-packed time-limit renewable fuse construction, with the air cushion feature, the first to pass the Underwriters Laboratory test requirements.

Edgar C. Walthall has joined the sales organization of the Boiler Equipment Service Co., Candler Building, Atlanta, Ga., who are district engineers of the **Conveyors Corporation of America,** Chicago, Ill. Mr. Walthall is a graduate of the Georgia Institute of Technology, and was recently superintendent of the fire brick plant of Stevens, Inc., at Stevens Pottery, Ga. He is experienced in marine and heating engineering.

A. G. Hill, 45 Jarvis St., Toronto, Ontario, Canada, has the agency for the Marion line of stokers in Toronto. **The Riley Engineering & Supply Co.,** 7360 Dufferin St., Toronto, has been appointed exclusive agent for the sales of the Marion line of soot blowers in Canada.

Trade Literature

Slate Larries. Marion Machine, Foundry & Supply Co., Marion, Ind. Bulletin No. 216. Four-page folder describing and illustrating the dumping at end, tub, automatic dump and return, car, brakes, motor and cab of these larries.

Bucket Elevators. The Jeffrey Mfg. Co., Columbus, Ohio. Catalog No. 410. Pp. 31; 7½ x 10½ in.; illustrated. Power houses, coal yards and railroad coaling stations will be interested in this catalog.

Forged Steel Pipe Flanges. American Spiral Pipe Works, Chicago, Ill. Catalog 24. Pp. 86; 8½ x 11 in.; illustrated. This book should prove useful to engineers, designers and operators of power systems. Formulas and data tables are arranged for easy reference. American Engineering Standards of 400, 600 and 900 lb. W. S. P. are embodied in the book, as also are complete data covering existing standards. A section on corrugated-steel furnaces is included.

Refractories and Furnace Design. Plibrico Jointless Firebrick Co., Chicago, Ill. Second edition. Pp. 36; 8½ x 11 in.; illustrated. Treatise on the building of monolithic furnace linings with Plibrico furnace lining.

Hand Stokers. Marion Machine Foundry & Supply Co., Marion, Ind. Catalog No. 60-R. Pp. 23; 9 x 11½ in.; illustrated. Type C hand stokers, type A hopper feed and Marion auxiliary air inlets are described.

Newark Wire Cloth Co., Newark, N. J., has issued Catalog No. 25, containing 64 pages and illustrations relating to wire screens for screening coal, steel wire cloth, filter cloth, etc.